IN THE UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION

SOUTH CAROLINA COASTAL CONSERVATION LEAGUE, Plaintiff, v. UNITED STATES ARMY CORPS OF ENGINEERS, CHARLESTON DISTRICT; LTC EDWARD CHAMBERLAYNE, in his official capacity as Commander of the Charleston District; SA JOHN M. McHUGH, in his official capacity as the Secretary of the U.S. Army; LTG THOMAS P. BOSTICK, in his official capacity as Chief of Engineers; Defendants.	**COMPLAINT** C.A. No. 2:13-cv-01543-DCN

INTRODUCTION

1. This action challenges the Defendants' unlawful approval of South Coast Mitigation Group, LLC's ("South Coast") plan to convert a freshwater wetland on the banks of the Savannah River in Jasper County, South Carolina into a salt marsh, deeming this wetland conversion a "restoration." The two authorizations issued by the U.S. Army Corps of Engineers and various Corps officials (collectively hereinafter "the Corps") allow South Coast to convert these valuable freshwater wetlands into salt marsh by removing water-control structures from the project site, in the process undermining past Corps efforts to protect the historically-freshwater wetland from saltwater intrusion caused by Corps navigation projects in the Savannah Harbor. South Coast would then be able to sell credits from the mitigation bank to offset unavoidable impacts to salt marshes from Corps-permitted activities in other areas of coastal South Carolina.

In short, the Corps has unlawfully sanctioned South Coast's plan to dismantle features protecting increasingly rare freshwater habitat from unnatural saltwater intrusion, and sell mitigation credits on the premise that the project "restores" salt marsh.

2. On April 16, 2013, the Corps issued an official approval of South Coast's Mitigation Banking Instrument ("MBI Approval"), attached hereto as Ex. A, along with a Clean Water Act authorization pursuant to Corps Nationwide Permit 27 ("NWP 27"), attached hereto as Ex. B, which is available only for aquatic habitat restoration, establishment, and enhancement activities. The Corps' decision was unlawful for one fundamental reason: characterization of the project as wetlands "restoration," necessary both for MBI approval and for coverage under NWP 27, is wholly unsupported by the facts. First, the project cannot "restore" salt marsh to an area that has never been salt marsh. Second, by the Corps' own definition of restoration, the project must result in a net gain in aquatic resources. Neither the Corps nor South Coast has shown that this project will result in a net gain in aquatic functions and services. In fact, this project is unlikely to result in a net gain in aquatic resources, because it proposes to eliminate rare and valuable freshwater wetlands. The Corps' mischaracterization of this project as restoration, leading to its approval as a mitigation bank and its authorization under NWP 27, was arbitrary and capricious in violation of the Administrative Procedure Act.

3. The Corps' failure to consider the negative impacts of this project in spite of serious objections by expert agencies and the concerned public further resulted in violations of the agency's responsibilities under the National Environmental Policy Act ("NEPA"). NEPA requires the Corps to evaluate how its decision to authorize the project will affect the human environment, including the historic, recreational, and cultural values provided by the impounded freshwater wetland at the project site. Rather than fully considering the impacts of this project as

required by NEPA, the Corps made a cursory and unsupported finding that the project had no potential to significantly impact the environment.

4. Plaintiff seeks a declaration that the Corps' decision to approve the final MBI and associated work at the site pursuant to NWP 27 was unlawful, arbitrary, and capricious in violation of the Administrative Procedure Act. Plaintiff further seeks a declaration that the Corps has violated NEPA in approving the final MBI and granting NWP 27 authorization for this project. Plaintiff asks this Court to vacate the final MBI approval and NWP 27 authorization, and to order the Corps to comply with the APA and NEPA in connection with all further actions relating to this project.

JURISDICTION AND VENUE

5. Jurisdiction is proper in this Court pursuant to 28 U.S.C. § 1331 (federal question), 28 U.S.C. § 11 (federal officer action), 28 U.S.C. §§ 2201 and 2202 (declaratory judgment), 5 U.S.C. §§ 551 *et seq.* (Administrative Procedure Act, or "APA"), and 42 U.S.C. §§ 4321 *et seq*. (NEPA).

6. The violations of law alleged herein have occurred within the District of South Carolina. Venue for this action is proper in this Court pursuant to 28 U.S.C.A. § 1391 and Local Civil Rule 3.01(A)(1).

PARTIES

A. Plaintiff

7. Plaintiff South Carolina Coastal Conservation League ("League") is a not-for-profit corporation founded in 1989. The League is incorporated under the laws of South Carolina, maintains its headquarters office in Charleston, South Carolina, and currently has approximately 5,000 members. Its mission is to protect the natural environment of the South

Carolina coastal plain and to enhance the quality of life of South Carolina communities by working with individuals, businesses, and government to ensure balanced solutions to environmental problems. Protecting wetlands and aquatic habitat in the Lowcountry of South Carolina has been an important goal of the League's since its establishment.

8. The League represents the interests of members who live or recreate in the immediate and general vicinity of the proposed project, and have an ongoing interest in protecting water quality and conserving wildlife and wildlife habitat in the areas impacted by the project. The project will impact the Lower Savannah River ecosystem, an area used, enjoyed, and depended upon by the League and its members for recreation, fishing, aesthetic enjoyment, wildlife observation, and other uses. Degradation of the Lower Savannah ecosystem, including its wildlife habitat and aesthetic value, will impair the League and its members' use and enjoyment of the area. The project will ultimately be used as mitigation for impacts to salt marshes throughout South Carolina, facilitating the impairment of use and enjoyment of these resources as well.

9. Plaintiff has been and continues to be injured by the Corps' characterization of this wetland conversion as "restoration," and its authorization of this project for use as a mitigation bank to offset harms to salt marshes elsewhere in South Carolina. Plaintiff reasonably believes that this project sets an unlawful precedent for mitigation banking pursuant to Section 404 of the Clean Water Act, which will ultimately result in the net loss of wetlands in the State. Plaintiff will be injured unless there is an order from this Court vacating the approval of the MBI and authorization pursuant to NWP 27, prior to the project proponent undertaking activities affecting the environment of South Carolina.

10. As set forth above, the League and its members have interests that will be adversely affected and irreparably harmed by South Coast's project, due to the Corps' arbitrary and capricious decision-making under the APA. The League and its members are also harmed by the procedural failures alleged here, which have prevented them from participating in an open and public discussion of this project pursuant to NEPA. Because the Corps' decision to authorize the MBI in violation of federal law is the cause of Plaintiff's injuries, an order from this Court requiring compliance with the law would redress Plaintiff's injuries.

B. Defendants

11. Defendant U.S. Army Corps of Engineers is an agency within the United States Department of Defense charged with permitting construction in the waters of the United States. The Charleston District of the Corps is responsible for implementing Section 404 of the federal Clean Water Act in South Carolina and is headquartered in Charleston, SC.

12. Defendant Lieutenant Colonel Edward Chamberlayne is the Commander and District Engineer for the Charleston District of the U.S. Army Corps of Engineers, and is sued in his official capacity. He supervises and manages all Charleston District decisions and actions.

13. Defendant John McHugh is the Secretary of the Army, and is sued in his official capacity as the head of the federal agency that took the final agency action challenged by this complaint.

14. Defendant Lieutenant General Thomas P. Bostick is the Commanding General and Chief of Engineers of the U.S. Army Corps of Engineers, and is sued in his official capacity.

LEGAL BACKGROUND

A. Corps Regulations Governing Nationwide Permits and NWP 27

15. In 1972, Congress passed the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). To achieve this objective, Section 301 of the CWA prohibits "the discharge of any pollutant" into "the navigable waters of the United States" except in accordance with permits issued under the CWA. 33 U.S.C. § 1311(a). "Pollutants" include dredged spoil, rock, dirt, and sand, among other materials. 33 U.S.C. § 1362(6).

16. Section 404 of the CWA authorizes the Secretary of the Army to issue permits for the discharge of dredged or fill material into "waters of the United States" when certain conditions are met. 33 U.S.C. § 1344. The Section 404 permitting program is administered by the U.S. Army Corps of Engineers, with ultimate authority for the program residing with the U.S. Environmental Protection Agency.

17. The term "waters of the United States" includes wetlands. The definition of "wetlands" used by the Corps and the United States Environmental Protection Agency is as follows:

> The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

33 C.F.R. § 328.3(b) (Corps); 40 C.F.R. § 232.2(r) (EPA).

18. Unless exempted by Section 404(f)(1), all discharges of dredged or fill material into waters of the United States, including wetlands, must be authorized under a Section 404 permit issued by the Corps.

19. Issuance of all Section 404 permits is subject to the Section 404(b)(1) Guidelines found at 40 C.F.R. § 230 *et seq*. These guidelines provide, *inter alia*, that no discharge of dredge or fill material may be permitted if there is a less damaging "practicable alternative" available, or if it will "cause or contribute to significant degradation" of waters of the United States. 40 C.F.R. § 230.10.

20. The Section 404(b)(1) Guidelines further provide that "the degradation or destruction of special aquatic sites is considered to be among the most severe environmental impacts covered by these Guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources." 40 C.F.R. § 230.1. Wetlands are designated "special aquatic sites" under the Guidelines. 40 C.F.R. § 230.41.

21. There are two types of Section 404 permits: individual permits that authorize specific activities on a case-by-case basis, and general permits that provide standing authorization for all activities that fit the description in the permit. *See* 33 U.S.C. § 1344(a), (e).

22. "Nationwide" permits are available only where the authorized activities will have minimal adverse cumulative or individual effects on the environment, are noncontroversial, and are in the public interest. *See* 33 U.S.C. § 1344(e); 33 C.F.R. § 330.1; 64 Fed. Reg. 39,348 (July 21, 1999); 77 Fed. Reg. 10,185 (Feb. 21, 2012) ("NWPs authorize activities that have minimal individual and cumulative adverse effects on the aquatic environment that would likely generate little, if any, public comment if they were evaluated through the standard permit process with a full public notice."). Moreover, "[n]o activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation . . . ." 77 Fed. Reg. 10,283 (Feb. 21, 2012).

23. If the Corps "finds that the proposed activity would have more than minimal individual or cumulative net adverse effects on the environment or otherwise may be contrary to the public interest," it must "modify the NWP authorization to reduce or eliminate those adverse effects, or [] instruct the prospective permittee to apply for a regional general permit or an individual permit." 33 C.F.R. § 330.1(d); *see id.* at 325.2(e)(1)(i); 77 Fed. Reg. 10,287 (Feb. 21, 2012).

24. Any activity authorized under a nationwide permit must avoid and minimize adverse effects, include mitigation to minimize such adverse effects, and include, at a minimum, one-for-one compensatory mitigation for all wetland losses exceeding one-tenth of an acre. 77 Fed. Reg. 10,285 (Feb. 21, 2012).

25. Before authorizing a project under a nationwide permit, the district engineer must "consider any comments from federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation," and must "indicate in the administrative record . . . that the resource agencies' concerns were considered." 77 Fed. Reg. 10,287 (Feb. 21, 2012).

26. The nationwide permit at issue in this case – Nationwide Permit 27 – is by its terms limited to restoration, establishment and enhancement activities that "result in net increases in aquatic resource functions and services." 77 Fed. Reg. 10,275 (Feb. 21, 2012) ("NWP 27"). It is not available to authorize "the conversion of a stream or natural wetlands to another aquatic habitat type." *Id.*

27. "Compensatory mitigation is not required for activities authorized by [NWP 27] since these activities must result in net increases in aquatic resource functions and services." 77 Fed. Reg. 10,188 (Feb. 21, 2012).

B. Corps Regulations on Mitigation Banks

28. Corps regulations establish standards and criteria "for the use of all types of compensatory mitigation . . . to offset unavoidable impacts to waters of the United States authorized through the issuance of Department of the Army ("DA") permits pursuant to section 404 of the Clean Water Act (33 U.S.C. §1344) and/or sections 9 or 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §§ 401, 403)." 33 C.F.R. § 332.1.

29. The preferred method for accomplishing such mitigation is the sale of credits from centralized "mitigation banks." 33 C.F.R. § 332.3(b)(2). A mitigation bank is "a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument." *Id.* at 332.2.

30. The Corps must approve Mitigation Banking Instruments pursuant to the procedure laid out at 33 C.F.R. § 332.8.

31. The Corps' compensatory mitigation regulations define "restoration" as "the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource areas, restoration is divided into two categories: re-establishment and rehabilitation." 33 C.F.R. § 332.2. Both re-establishment and rehabilitation are defined as resulting in net gains in aquatic resources. "Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions. . . .

Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area." *Id.*

32. The "service area" of a mitigation bank should follow a watershed approach. "In general, the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services . . . ." 33 C.F.R. § 332.3(b)(1). *See id.* at 332.3(c)(1) ("The district engineer must use a watershed approach to establish compensatory mitigation requirements in DA permits to the extent appropriate and practicable."); *id.* at § 332.3(c)(1) - (2) (describing watershed approach).

33. The district engineer is required to give "full consideration to any timely comments and advice of the [Interagency Review Team]," convened as part of the required regulatory process for approval of mitigation banks. 33 C.F.R. § 332.8(b)(4). Further, "[t]he district engineer will seek to include all public agencies with a substantive interest in the establishment of the mitigation bank . . . ." *Id.* at (b)(2).

C. The National Environmental Policy Act

34. Congress enacted the National Environmental Policy Act to "promote efforts which will prevent or eliminate damages to the environment . . . ." 42 U.S.C. § 4321. To achieve this goal, NEPA requires federal agencies to fully consider and disclose the environmental consequences of an agency action before proceeding with that action. *Id.* at 4332(2)(C); 40 C.F.R.§§ 1501.2, 1502.5. Agencies' evaluation of environmental consequences must be based on scientific information that is both "[a]ccurate" and of "high quality." 40 C.F.R. § 1500.1(b). In addition, federal agencies must notify the public of proposed projects and allow

the public the opportunity to comment on the environmental impacts of their actions. *Id.* at 1506.6.

35. NEPA requires that federal agencies prepare an Environmental Impact Statement ("EIS") for major federal actions significantly affecting the quality of the human environment. 42 U.S.C. § 4332(2)(C). Where it is not readily discernible how significant the environmental effects of a proposed action will be, federal agencies may prepare an Environmental Assessment ("EA") to establish the project's level of impact. 40 C.F.R. §§ 1501.4(b), 1508.9(a)(1); 33 C.F.R. §§ 230.10 - 230.11.

36. Under applicable Council of Environmental Quality ("CEQ") regulations, "[m]ajor Federal action" is defined to "includ[e] actions with effects that may be major and which are potentially subject to Federal control and responsibility." 40 C.F.R. § 1508.18. "Actions include new and continuing activities, including projects and programs entirely or partly . . . regulated[] or approved by federal agencies." *Id.*

37. CEQ regulations further provide that "'significantly' as used in NEPA requires considerations of both context and intensity." 40 C.F.R. § 1508.27. In considering "context" for site specific projects, agencies must assess "short and long term effects" in the locality. *Id.*

38. In considering the "intensity," or the "severity of impacts" of a project, agencies must consider a number of factors, including impacts that may be both beneficial and adverse; unique characteristics of the project site such as proximity to historic or cultural resources, wetlands, and ecologically critical areas; the degree to which the impacts are highly controversial; the degree to which the action may be precedential; the degree to which the action may cause the loss of significant scientific, cultural, or historical resources; and the degree to which the action may adversely affect endangered or threatened species and their habitat. *See* 40

C.F.R. § 1508.27(b). Any "one of these factors may be sufficient to require preparation of an EIS in appropriate circumstances." *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 864 (9th Cir. 2005).

39. An EIS or EA must identify the direct, indirect, and cumulative impacts of the proposed action, consider alternative actions and their impacts, and identify all irreversible and irretrievable commitments of resources associated with the proposed action. *See* 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.14, 1508.7, 1508.8. NEPA regulations also require an analysis of measures to mitigate the impacts of proposed actions. *See id.* §§ 1502.14(f), 1502.16(h).

40. A "[f]inding of no significant impact," or "FONSI," is "a document by a Federal agency briefly presenting the reasons why an action . . . will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents' related to it." 40 C.F.R. § 1508.13

STATEMENT OF FACTS

41. South Coast proposes to establish the Clydesdale Club Mitigation Bank in Jasper County, South Carolina. The mitigation site will total 694.1 acres. South Coast states in the Final MBI that the "overall goal of this mitigation project is to breach the existing dikes and remove water control structures as necessary to restore and sustain chemical, biological, and physical characteristics of a tidal marsh system." Mitigation Banking Instrument at 1, attached hereto as Ex. C.

42. The characterization of this proposal as a "restoration" project is false. The tract of land at issue was a freshwater intertidal wetland when it was impounded, and has been a freshwater impounded wetland for at least 200 years. The proposed mitigation bank would

create saltwater marsh by removing water control structures that have been in place since the wetlands were impounded.

43. The flows that would convert this area to a salt marsh are saline now due to historic deepening of the Savannah River, which has caused the saltwater interface to migrate upstream. To protect freshwater wetlands that were threatened by saltwater intrusion from harbor deepening, the Army Corps of Engineers built a canal to supply freshwater to affected public and private lands, including the Clydesdale tract. *See*, *e.g.*, Water Use Agreement, June 10, 1969, attached hereto as Ex. D; Ex. A (MBI Approval) at 10-11. These measures should be maintained and strengthened, not removed under the guise of "restoring" tidal flow. Such an influx of saltwater would be the result of unnatural harbor deepening, would eliminate precious freshwater resources, and would not "restore" any previous function of the area.

44. Far from being a neutral conversion from freshwater to saltwater, this proposal would negatively impact the environment of South Carolina. Tidal freshwater impoundments are increasingly rare in coastal South Carolina, and they provide important habitat for migratory birds, including species that are endangered or proposed for protection under the Endangered Species Act. Furthermore, the permitted activity falsely purports to "restore" salt marshes at the proposed site to sell mitigation credits for the loss of salt marshes elsewhere in the state. Because the proposal in fact represents a conversion of rare freshwater wetlands into salt marsh, its use to sell mitigation credits could actually result in a net loss of wetlands in South Carolina.

45. The South Carolina Department of Natural Resources ("DNR"), the U.S Fish and Wildlife Service ("FWS"), and the National Marine Fisheries Service ("NMFS") have objected to the proposal, explaining that the project is not a "restoration" of wetlands, but rather a conversion from one type of wetland to another. *See* FWS Letter to Corps at 1, Jan. 14, 2011,

attached hereto as Ex. E ("The [Savannah National Wildlife] Refuge . . . objects to using the term 'restoration' when this is clearly conversion of one wetland type to another for the sole objective of selling mitigation credits."); SCDNR Letter to Corps at 4, December 9, 2011, attached hereto as Ex. F ("We do not believe the proposed bank has potential to restore or enhance wetland functions. . . . We do not view this issue to be fixable. . . . Conversion of wetlands does not equate to restoration of wetlands.") SCDNR Letter to Corps at 2, August 7, 2012, attached hereto as Ex. G ("[T]he site will not be restored by the proposed activities, but it will be converted, and to the detriment of important species.") (Emphasis in original).

46. These agencies have also pointed to the loss of valuable freshwater wetlands that would result from the project. As FWS stated, "485 acres of increasingly rare, functional, intact tidal freshwater impoundments and the associated fish and wildlife functions and values they are capable of providing will be impacted and irretrievably lost." FWS Letter to Corps at 1, May 30, 2012, attached hereto as Ex. H.

47. Expert agencies have communicated to the Corps that the project will not result in a net increase in aquatic functions and services, which as shown above, is necessary for a "restoration project" and for coverage under NWP 27. SCDNR Letter to Corps at 3, July 17, 2012, attached hereto as Ex. I ("[T]he conversion [of] wetland functions and values are no more valuable than the existing wetland functions and values."); Ex. E at 2 (explaining that the project will result in "fewer species of a different suite with an overall reduction in bio-diversity" and "will be detrimental to the diversity and productivity of the watershed.")

48. Despite these objections, on April 16, 2013, the Corps released its decision to approve South Coast's Final MBI pursuant to Corps regulations on the approval of mitigation banks, and to allow coverage of the project under NWP 27, the Clean Water Act general permit

for "[a]quatic habitat restoration, establishment, and enhancement activities." Ex. A (MBI Approval); Ex. B (NWP 27 Verification).

49. Agency objections to this approval were fundamental to the purpose of the project. *See* Ex. F at 4 ("Permitting and establishment of this bank would be an arbitrary and capricious action that will set an unnecessary precedent with multiple unanticipated consequences based on the premise that mitigation banks can be approved on the flimsy premise that wetland conversion equals wetland restoration."); Ex. H at 1 (USFWS "does not support, and strongly discourages" this project.); NMFS Letter to Corps at 1, June 7, 2012, attached hereto as Ex. J (stating that NMFS would have instituted formal objection proceedings, had it been able to staff such an endeavor); *see* Ex. A (MBI Approval) at 6-16, 20 ("Public and Agency Comments"). The Corps insufficiently considered these objections in issuing its authorizations.

CLAIMS FOR RELIEF

FIRST CLAIM FOR RELIEF
(Violation of the APA – The Corps Acted Arbitrarily and Capriciously and Not In Accordance with Law in Approving South Coast's MBI)

50. Plaintiff incorporates the allegations of the preceding paragraphs as if set forth in full.

51. As noted above, the Corps' compensatory mitigation regulations define "restoration" as "returning natural/historic functions to a former or degraded aquatic resource," and resulting in net gains in aquatic resources. 33 C.F.R. § 332.2.

52. The Corps' MBI Approval violates the agency's own regulations by failing to require that the project fit the above-described basic definitional criteria. Instead, the project will convert a freshwater wetland into a salt marsh.

53. The Corps' MBI approval further violates its own regulations by failing to consider the loss of valuable freshwater wetlands that would occur should this project go forward. This expected loss of aquatic resources is inconsistent with the Corps' own regulatory definition of "restoration," 33 C.F.R. § 332.2, and is also inconsistent with other Corps efforts to maintain these wetlands as freshwater. *See* Ex. D (Water Use Agreement).

54. The Corps erred by failing to consider the objections of sister agencies and the public. *See* 33 C.F.R. § 332.8(b)(2), (4). The Corps violated its regulatory mandate to consider agency "comments and advice" by minimizing and misrepresenting the fundamental objections lodged by expert agencies in its decision document approving the Final MBI.

55. The Corps erred by unnecessarily approving a service area for this mitigation bank that is much larger than the "watershed approach" preferred by the regulations. 33 C.F.R. § 332.3(b)(1), (c).

56. For the foregoing reasons, the Corps' violations of its own regulations in approving the Final MBI are arbitrary, capricious, an abuse of discretion, and in violation of the APA, 5 U.S.C. § 706(2).

SECOND CLAIM FOR RELIEF
(Violation of the APA – The Corps Acted Arbitrarily and Capriciously and Not In Accordance with Law in Granting NWP 27 Approval for this Project)

57. Plaintiff incorporates the allegations of the preceding paragraphs as if set forth in full.

58. As noted above, NWP 27 authorizes "[a]ctivities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas. . . provided those activities result in net increases in aquatic resource functions and services." 77 Fed. Reg. 10,275 (Feb. 21, 2012).

59. NWP 27 "does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type." *Id.*

60. The permitted activity here – the filling of valuable freshwater wetlands for the establishment of the South Coast Mitigation Bank – is not "restoration" within the meaning of NWP 27. Rather, the permitted activity is an unlawful "conversion" of valuable freshwater wetlands to saltwater wetlands.

61. The Corps also failed to show that the permitted activity will "result in net increases in aquatic resource functions and services" as required by NWP 27.

62. The Corps erred in authorizing this project – in spite of substantial expert agency objections – under any nationwide permit, because nationwide permits are available only where the authorized activities will have minimal adverse cumulative or individual effects on the environment, are noncontroversial, and are in the public interest. *See* 33 U.S.C. § 1344(e); 33 C.F.R. § 330.1; 64 Fed. Reg. 39,348 (July 21, 1999); 77 Fed. Reg. 10,185 (Feb. 21, 2012)

63. For all of these reasons, the Corps' actions in granting authorization for this project pursuant to NWP 27 are arbitrary, capricious, an abuse of discretion, and in violation of the APA, 5 U.S.C. § 706(2).

THIRD CLAIM FOR RELIEF
(Violation of the APA – The Corps Acted Arbitrarily and Capriciously and Not In Accordance with Law in Approving this Project under the Section 404(b)(1) Guidelines)

64. Plaintiff incorporates the allegations of the preceding paragraphs as if set forth in full.

65. Issuance of all Section 404 permits is subject to the Section 404(b)(1) Guidelines providing, *inter alia*, that no discharge of dredge or fill material may be permitted if there is a

less damaging "practicable alternative" available, or if it will "cause or contribute to significant degradation" of waters of the United States. 40 C.F.R. § 230.10.

66. This project causes or contributes to significant degradation – in the form of complete eradication – of a valuable freshwater wetland. The Corps' approval of this project under NWP 27 thereby violates the regulatory guidelines disallowing permit coverage for any project causing or contributing to significant degradation of aquatic resources.

67. The Corps' approval further violates the Section 404(b)(1) Guidelines by approving this project under a Section 404 permit, where the project will result in "the degradation or destruction of [a] special aquatic site[]." 40 C.F.R. § 230.1; 40 C.F.R. § 230.41.

68. The Corps' approval is thus arbitrary, capricious, and an abuse of discretion in violation of the APA, 5 U.S.C. § 706(2).

FOURTH CLAIM FOR RELIEF
(Violation of NEPA and APA – The Corps Acted Arbitrarily and Capriciously and Not in Accordance with Law in Failing to Prepare an Environmental Impact Statement)

69. Plaintiff incorporates the allegations of the preceding paragraphs as if set forth in full.

70. The Corps' approval of the Clydesdale Club Mitigation Bank is a "major Federal action" requiring NEPA review. Approval of this bank was subject to federal control and responsibility, and results in impacts that may be major. *See* 40 C.F.R. § 1508.18 (2003).

71. The Corps' approval of the Clydesdale Club Mitigation Bank also results in significant environmental impacts requiring the preparation of an EIS. First, the approval of this project was highly controversial as "485 acres of increasingly rare, functional, intact tidal freshwater impoundments and the associated fish and wildlife functions and values they are capable of providing will be impacted and irretrievably lost." *See* USFWS Letter to Corps at 1,

May 30, 2012, attached hereto as Ex. H; 40 C.F.R. § 1508.27(b)(1),(3), (4). Second, "[b]ank approval will set an ecologically unwise precedent given the finite and diminishing amount of freshwater impoundments in the Savannah River system and along the South Carolina coast." *Id.*; 40 C.F.R. § 1508.27(b)(6),(8); *see also* SCDNR Letter of December 9, 2011 (Ex. F at 4) ("[p]ermitting and establishment of this bank would be an arbitrary and capricious action that will set an unnecessary precedent with multiple unanticipated consequences."). Finally, the Corps' approval may adversely affect endangered species. *See* SCDNR Letter of August 7, 2012 (Ex. G at 4-5); 40 C.F.R. § 1508.27(b)(9).

72. Given the triggering of multiple "significance factors" under 40 C.F.R. §1508.27, the Corps was required to prepare an EIS in connection with its approval of the Clydesdale Mitigation Bank. *See, e.g., North Carolina v. Fed. Aviation Admin.*, 957 F.2d 1125, 1131 (4th Cir. 1992) (holding that agencies' refusal to prepare EIS "is arbitrary and capricious if its action *might* have a significant environmental impact").

73. The Corps has violated NEPA and its implementing regulations by failing to prepare an EIS. The Corps' MBI Approval and NWP 27 Verification are thus arbitrary, capricious, and an abuse of discretion in violation of NEPA and the APA, 5 U.S.C. § 706(2).

FIFTH CLAIM FOR RELIEF
(Violation of NEPA and APA – The Corps Acted Arbitrarily and Capriciously and Not in Accordance with Law in Making an Unsupported Finding of No Significant Impact)

74. Plaintiff incorporates the allegations of the preceding paragraphs as if set forth in full.

75. The Corps makes a Finding of No Significant Impact ("FONSI") in its approval of the Final Mitigation Banking Instrument for the Clydesdale Club Mitigation Bank. The Corps' FONSI states only as follows:

> Having reviewed the information provided by the bank sponsor and all interested parties and an assessment of the environmental impacts, the undersigned finds that this decision **will not** have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement **will not** be required.

MBI Approval at 29 (emphasis in original).

76. The FONSI fails to explain to why the Clydesdale Club Mitigation Bank will not have a significant environmental impact, and fails to include an environmental assessment or a summary of any environmental assessment. *See* 40 C.F.R. § 1508.13. The Corps received multiple comments from expert state and federal agencies explaining why the project would have significant environmental impacts. The Corps wholly fails to explain its disagreement with these voluminous comments in making its FONSI.

77. The Corps' FONSI is conclusory and unsupported, and is arbitrary, capricious, and an abuse of discretion in violation of NEPA and the APA, 5 U.S.C. § 706(2).

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court:

A. Declare that the Defendants' April 16, 2013 authorization of NWP 27 for work in connection with the establishment of the Clydesdale Club Mitigation Bank violated the Administrative Procedure Act, National Environmental Policy Act, the terms and conditions of Nationwide Permit 27 itself, and applicable regulations as described above;

B. Declare that the Corps' April 16, 2013 Letter of Approval granting the South Coast MBI mitigation bank status violated the Administrative Procedure Act, National Environmental Policy Act, and applicable regulations as described above;

C. Vacate both the Corps' NWP 27 authorization and Final Mitigation Banking Instrument approval;

D. Enjoin the Defendants from authorizing any action or construction associated with the MBI and NWP 27 verification until they fully comply with the Administrative Procedure Act, National Environmental Policy Act, and all implementing regulations;

E. Allow Plaintiff its costs of suit, including reasonable attorneys' fees pursuant to 16 U.S.C. § 470w-4, and expert witness fees; and

F. Grant Plaintiff such further and additional relief as this Court deems to be necessary and appropriate.

Respectfully submitted this 6th day of June, 2013.

/s/ Christopher K. DeScherer
Christopher K. DeScherer
Bar Number: 10394
Southern Environmental Law Center
43 Broad Street, Suite 300
Charleston, SC 29401
Telephone: (843) 720-5270
Facsimile: (843) 720-5240

Attorney for Plaintiff

Exhibit A

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69-A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

Regulatory Division

South Coast Mitigation Group, LLC
Attn: Mr. Murphy McLean
Post Office Box 1541
Lake City, Florida 32056

Dear Mr. McLean:

This letter is to inform you that the Charleston District, Corps of Engineers (Corps) has reviewed and approved the Final Mitigation Banking Instrument (MBI) dated June 2012, for the Clydesdale Club Mitigation Bank. In addition, the Corps has issued a Nationwide Permit 27 (NWP 27) verification letter authorizing work in waters of the United States associated with the restoration of aquatic resources on the mitigation bank site. As bank sponsor, you are required to comply with the approved MBI, the terms and conditions of your NWP 27 verification letter, and the Corps' regulations regarding compensatory mitigation (33 CFR 332).

The Clydesdale Mitigation Bank is a variable credits mitigation bank and has the potential to generate a maximum of 2,112.4 salt marsh restoration and enhancement credits, and a maximum of 303.1 salt marsh preservation credits. Mitigation credits were calculated using the Proposed Mitigation Worksheets from the Charleston District's 2002 Standard Operating Procedures for Compensatory Mitigation. Please note the number of mitigation credits is dependent on several factors, such as the ability of the bank sponsor to document the success of the mitigation activities, and the control and location factors that are discussed and identified in Section 12 and Appendix O of the approved MBI.

The bank sponsor accepts all risk, liability, and responsibility for the success of all mitigation activities associated with the approved mitigation bank. Likewise, the bank sponsor must prepare and submit annual monitoring reports to document whether the preservation areas (189.46 acres) and the restoration areas (487.55 acres) on the project site meet the necessary interim and final performance standards. When credits are debited, the bank sponsor must calculate and record both the number of credits and the number of acres consumed by each credit transaction. When all 677.01 acres have been consumed, no more credits may be sold from this mitigation bank.

From the Corps' perspective, the next steps in the establishment of the approved mitigation bank include recording the conservation easement to protect the mitigation bank site, marking the boundary of the site with permanent signs, and executing the necessary financial assurances. Once these tasks have been completed, the Corps will be in a position to approve Credit Release 1. We look forward to working with you to ensure the Clydesdale Mitigation Bank complies with the requirements of the approved MBI.

If you have any questions regarding this matter, please do not hesitate to contact me or the project manager, Mr. Nat Ball, at 843/329-8044 or toll free at 1-866/329-8187.

Sincerely,

Edward P. Chamberlayne, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

Enclosure

Copy Furnished:

Mr. Alton Brown
Resource+Land Consultants
41 Park of Commerce Way, Suite 303
Savannah, Georgia 31405

Application SAC 2009-00756

CESAC-RD-SP

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment, Public Interest Review, and Statement of Findings for the Clydesdale Mitigation Bank.

1. Proposed action as described in the public notice

1.1 Bank Sponsor

South Coast Mitigation Group, LLC
Attn: Mr. Murphy McLean
Post Office Box 1541
Lake City, Florida 32056

1.2 Waterway & Location

The proposed project is located adjacent to US Highway 17 and the Back River portion of the Savannah River in Jasper County, South Carolina.
Latitude North: 32.127661° Longitude West: -81.069595°

1.3 Background

According to a Cultural Resources Survey of Clydesdale Plantation Tract, dated November 2011, the project site was developed as a rice plantation more than 150 years ago. The original earthen embankments, water control structures, and ditches were used to manage the project site for rice production. Based on a 1931 aerial photograph, these rice fields were abandoned more than 80 years ago. The earthen embankment that separates the salt marsh on the project site from the freshwater impoundment on the project site was constructed during the 1950s. A borrow pit that was excavated inside the existing freshwater impoundment was probably used to obtain fill material for U.S. Highway 17.

The freshwater impoundment on the project site has primarily been managed for private recreation since the 1950s. As a result of the modifications to the original rice fields, such as the borrow pit described above and the freshwater canal described below, SHPO determined that the embankments and water control structures associated with the existing freshwater impoundment are not considered eligible for the National Register of Historic Places. However, cultural resources and a cemetery that were identified inside the existing freshwater impoundment will be protected as part of the proposed mitigation bank site.

According to the Savannah District, Corps of Engineers, the Savannah Harbor Deepening and Sediment Control Works Projects (38-foot channel) were constructed during the 1970s and moved the saltwater/freshwater interface more than six miles upriver. As a result, areas that are subject to the ebb and flow of the tide near the project site were converted from freshwater marsh to salt marsh. In order to mitigate for these impacts to the Savannah National Wildlife Refuge

(SNWR) and private properties that manage freshwater impoundments adjacent to the Back River, the Federal project included the construction of a freshwater canal.

The existing freshwater canal carries water from approximately 8 miles upriver to the SNWR and the mitigation bank site. Freshwater enters the project site through water control structures that are located at the northwestern end of the existing impoundment. Cross dikes and water control structures that are located inside the impoundment are used to manage water levels within individual fields for recreational purposes (hunting, fishing, etc). Once the freshwater passes through the project site it is released into the Back River through water control structures that are located at the southeastern end of the existing impoundment. The ability of the sponsor/property owner to manage the freshwater impoundment on the project site is dependent on the maintenance of the existing freshwater canal by the Federal government.

As described below, the earthen embankment and water control structures that are located adjacent to the Back River prevent natural tidal flows from entering the freshwater impoundment on the project site. Areas on the project site that are subject to the ebb and flow of the tide currently support salt marsh vegetation.

1.3 **Existing Conditions**

The project site consists of 208 acres of tidal salt marsh and 485 acres of freshwater impoundment (a former rice field) that is currently managed for recreation (e.g. hunting, fishing, etc). Earthen embankments, water control structures, and ditches on the project site enable the property owner to manage hydrology within the existing freshwater impoundment. Individual fields can be flooded or drained for different recreational uses. As shown on Figure 5 in the MBI, the habitat within the freshwater impoundment includes an open water pond, a flooded field, mowed fields, forested wetlands, shrub/scrub wetlands, and forested uplands.

The property owner uses freshwater from an adjacent canal to raise or lower water levels within the individual fields. They can flood a mowed field, or drain a flooded field and plant crops to meet their specific recreational needs. For the purpose of our review, the project site consists of 208 acres of salt marsh that is subject to the natural ebb and flow of the tide, and 485 acres that is managed for recreation. The property owner has the ability to drain, flood, plant, mow, etc the area within the existing freshwater impoundment. As described below, the proposed mitigation plan consists of eliminating these management activities and restoring natural tidal flows and vegetation on the project site.

1.4 **Proposed Project**

The proposed project consists of the establishment and operation of a salt marsh mitigation bank. The proposed mitigation activities include the preservation of 208 acres of existing tidal salt marsh, and the restoration of 485 acres of tidal salt marsh. The mitigation work plan includes the removal of an existing earthen embankment and water control structures to restore natural tidal flows and vegetation on the project site and the placement of fill material in the adjacent ditches to restore natural elevations. As decided in a separate Memorandum for Record (Nationwide Permit 27 Verification) dated April 16, 2013, the proposed activities in waters of the U.S. comply with the terms and conditions of NWP 27. Therefore, no additional authorization is required from the Corps for the bank sponsor to perform work in waters of the U.S.

Once the earthmoving work is completed, the bank sponsor will monitor the project site to confirm that degree, duration, and periodicity of inundation and saturation are comparable with the reference sites, and to confirm that appropriate vegetation, such as black needle rush and salt marsh cord grass, naturally regenerates on the project site. Provided the proposed work is conducted in accordance with the approved MBI and the mitigation activities are determined to be successful, mitigation credits will be released and the bank sponsor will be allowed to sell credits to offset unavoidable adverse impacts to waters of the U.S. authorized by Department of the Army (DA) permits within the approved service area.

1.5 **Project Purpose and Need**

In accordance with regulations that were jointly published by the Corps of Engineers (33 CFR 332) and the Environmental Protection Agency (40 CFR 230), the bank sponsor has submitted a proposal to establish and operate a salt marsh mitigation bank in the Lower Savannah River watershed (USGS 8-digit Hydrologic Unit Code 3060109) and the Sea Islands/Coastal Marsh ecoregion of South Carolina. Mitigation credits generated by the proposed project would be used to offset unavoidable adverse impacts to waters of the U.S. authorized by DA permits within the approved service area.

The bank sponsor is responsible for determining whether the proposed mitigation bank is economically viable, including whether there is/may be sufficient demand for the mitigation credits within the approved service area in the future. From the Corps' perspective, the watershed will benefit from the preservation of existing aquatic resources and the restoration of aquatic resource functions and services on the project site whether or not the bank sponsor sells any of the mitigation credits generated by the proposed project.

2. Authority

☒ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403).
☒ Section 404 of the Clean Water Act (33 U.S.C. §1344).
☐ Section 103, Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
☐ Other (described below)

3. Scope of Analysis and Public Involvement

This scope listed in sections 3.1 – 3.3 represent the scope of the final project description, which may differ from the initially proposed project. If applicable, changes to the initially proposed project will be detailed in sections 3 and 4.

3.1 **National Environmental Policy Act (NEPA) Scope:** The proposed project consists of establishing and operating a mitigation bank that will restore and/or preserve aquatic resources and upland buffers on the project site. Therefore, the NEPA scope of analysis consists of the entire project site.

3.2 **National Historic Preservation Act (NHPA) Area of Potential Effect (APE):** The proposed project consists of establishing and operating a mitigation bank that will restore and/or preserve aquatic resources and upland buffers on the project site. Therefore, the NHPA review area consists of the entire project site.

3.3 **Endangered Species Act (ESA) Action Area:** The proposed project consists of establishing and operating a mitigation bank that will restore and/or preserve aquatic resources and upland buffers on the project site. Therefore, the action area consists of the entire project site.

4.0 **Mitigation Bank Review Process:** In accordance with the Mitigation Rule (33 CFR 332), the Charleston District has established an Interagency Review Team (IRT) that reviews documentation for the establishment and management of all proposed mitigation banks.

4.1 **Interagency Review Team (IRT):** The Corps, EPA, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Natural Resources Conservation Service, S.C. Department of Archives and History (SCDAH), S.C. Department of Health and Environmental Control (SCDHEC), and the S.C. Department of Natural Resources (SCDNR) participate in the IRT.

The Corps' representative serves as the Chair of the IRT and is responsible for determining the completeness of submittals (Prospectus, Draft MBI, Final MBI), scheduling site inspections, issuing Public Notices for proposed mitigation banks, coordinating with the bank sponsor and the IRT, etc. As a member of the IRT, the Corps works directly with the other regulatory and resource agencies to review mitigation bank proposals and to make recommendations to improve the overall quality of the associated mitigation work plans.

However, the Corps cannot delegate its responsibility to authorize mitigation banks in accordance with the Mitigation Rule (33 CFR 332). Although the Corps considers the comments and the written feedback that are submitted by the other members of the IRT, the Corps must independently evaluate and make decisions regarding proposed mitigation banks.

4.2 Draft Prospectus: A draft prospectus was submitted by the sponsor on May 1, 2009. The draft Prospectus was reviewed by the Corps and forwarded to the other members of the IRT. In addition, the sponsor presented information about the proposed project at the July 2009 IRT meeting. Based on the available information, the IRT recommended that the bank sponsor prepare and submit a complete Prospectus for the proposed project.

4.3 Prospectus: A revised prospectus dated September 2009 was submitted to the Corps by the sponsor. The complete Prospectus was reviewed by the Corps and forwarded to the other members of the IRT prior to the issuance of a Public Notice for the proposed mitigation bank.

4.4 Public Notice: A 30-day Public Notice was issued on September 28, 2009, to provide adjacent property owners, members of the public, organizations, and other interested parties an opportunity to comment on the proposed mitigation bank. The Public Notice stated, "[T]he work required to complete the restoration and enhancement of aquatic resources located on the mitigation site may be authorized under Nationwide Permit #27 after final review by the Corps, the South Carolina Department of Health and Environmental Control and the Interagency Review Team." Written comments regarding the review and approval of the proposed mitigation

bank that were received in response to the public notice were forwarded to the bank sponsor on November 5, 2009. In addition, the Corps and the IRT conducted a site inspection on November 6, 2009.

4.5 **Initial Evaluation:** The Corps reviewed comments that were received in response to the public notice and provided written feedback to the sponsor on November 9, 2009. Based on the available information, the Corps determined that the proposed mitigation bank has potential for providing appropriate compensatory mitigation for activities authorized by DA permits. In accordance with the Mitigation Rule, the Corps informed the bank sponsor that they may proceed with the preparation of a draft Mitigation Banking Instrument (MBI). Based on the positive feedback from the Corps and IRT, the bank sponsor elected to purchase the project site and to invest additional capital in the establishment of a mitigation bank.

4.6 **Draft Mitigation Banking Instrument (MBI):** The bank sponsor submitted a Baseline Monitoring and Functional Assessment Report dated April 2010 and a draft MBI dated November 2010 to the IRT. Each time a document was submitted by the bank sponsor to the Corps, it was distributed to the IRT for a 30-day comment period and it was discussed at the next IRT meeting. During the IRT review process, several agencies unexpectedly reversed their positions regarding the proposed project after the Corps notified the bank sponsor that they should prepare a draft MBI and the bank sponsor purchased the mitigation bank site. The bank sponsor was provided copies of the agencies written comments and objections regarding the proposed project, and the Corps directed the bank sponsor to revise the draft MBI in an effort to address these issues. A revised MBI dated March 2011was submitted to the Corps and the IRT. Based on this additional information, the Corps recommended on April 15, 2011, that the bank sponsor prepare and submit a Final MBI for the proposed project.

4.7 **Final MBI:** The bank sponsor submitted a Final MBI dated October 2011 to all the members of the IRT, which was distributed to the IRT for a 30-day comment period and was discussed at the December 7, 2011, IRT meeting. The Final MBI included a cover letter explaining how they attempted to address written comments and objections regarding the proposed project. Based on written comments and the discussion at the IRT meeting, several members of the IRT stated that their agency would not approve the proposed mitigation bank under any circumstances. Since the IRT was unable to reach a consensus, the bank sponsor was asked to revise the Final MBI in an effort to address specific issues that were required for the Corps to make a final decision. The bank sponsor submitted a revised MBI dated March 2012 and the Corps notified the other members of the IRT on May 17, 2012, that the Corps was planning to approve the Final MBI. EPA concurred with the Corps' decision and executed the signature page for the Final MBI. NMFS, USFWS, SCDHEC, SCDNR, and SHPO submitted written comments indicating that they objected to one or more aspects of the proposed project. As described in Section 4.8, the Final MBI dated March 2012 was revised to address SHPO's and SCDHEC's concerns. The most recent version of the Final MBI dated June 2012 is the one that is being reviewed and approved by the Corps at this time.

4.8 **Dispute Resolution:** From the Corps' perspective, the majority of the issues and objections described in Section 5.0 below were discussed and debated by the IRT more than once during our review of the proposed mitigation bank. In general, SCDNR and USFWS both objected to

the proposed project due to their position that the existing freshwater impoundment on the project site should be managed similar to the Savannah National Wildlife Refuge. NMFS and SCDHEC both stated that the proposed restoration activities would restore aquatic resource functions and services. However, they both objected to the number of mitigation credits generated by the proposed project, and NMFS also objected to the size of the proposed service area. SHPO requested that the bank sponsor clarify language in the draft conservation easement regarding the protection of archeological sites and a former cemetery on the project site. The Corps forwarded the bank sponsor the agency comment letters and advised the bank sponsor that SHPO's concerns regarding the draft conservation easement must be addressed.

The bank sponsor worked with the Corps and SHPO to revise the draft conservation easement and address SHPO's concerns. In addition, the bank sponsor worked with SCDHEC to address their concerns regarding the overall number of mitigation credits generated by the proposed mitigation bank. From the Corps' perspective, the proposed revisions to the Final MBI clarify the specific regulations that protect cultural resources on the project site and reduce the number of credits generated by the proposed mitigation bank. The Corps forwarded the revised MBI dated June 2012 to the other members of the IRT on July 3, 2012. The Corps advised the other members of the IRT that the revised MBI met our needs, and were planning to approve the proposed mitigation bank over their objections. Since the EPA signed the Consensus Statement and the Signature Page for the previous version of the MBI, they were asked to review the proposed changes and to sign a new Consensus Statement and Signature Page referencing the Final MBI dated June 2012. In addition, SHPO and SCDHEC withdrew their previous objections and signed the new Consensus Statement and Signature Page in the Final MBI.

Since EPA signed the Final MBI, and USFWS and NMFS elected not to forward the proposed project to their Regional Administrator/Regional Director, the proposed project was not elevated for higher level review in accordance with 33 CFR 332.8(e). The proposed mitigation bank is being reviewed and approved by the Corps over the objections of USFWS, NMFS, and SCDNR.

5.0 **Public and Agency Comments:** Written comments that were submitted in response to the Public Notice (Prospectus), the draft Mitigation Banking Instrument (MBI), and the Final MBI are summarized below and were considered during our review and approval of the proposed mitigation bank. Many of the issues identified in written comments were discussed and debated more than once by the members of the IRT during monthly meetings.

The Corps forwarded the bank sponsor a hardcopy of each comment letter and provided the bank sponsor with additional written guidance regarding major issues that had to be resolved in order to complete the review of the proposed project. As described above, the bank sponsor was required to revise both the draft MBI and the Final MBI. The Corps believes the bank sponsor has addressed the public and agency comments to the maximum extent practicable in the final MBI for the proposed mitigation bank.

Baseline Monitoring and Functional Assessment Report (BMFAR) – The Corps and several members of the IRT objected to the findings of the original Baseline Monitoring and Functional Assessment Report (April 2010). Specifically, the *Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Tidal Fringe Wetlands Along the Mississippi and*

Alabama Gulf Coast (HGM) and the Required Mitigation Credit Worksheets from the Charleston District's Standard Operating Procedures for Compensatory Mitigation cannot be used to evaluate the existing condition of the managed freshwater impoundment on the project site.

The Final MBI correctly uses HGM to evaluate the existing condition of the reference sites and the tidal salt marsh on the project site. As described below, some of the data that was included in the BMFAR was gathered in 2009/2010 and had to be updated. The Corps required the revised baseline data report to be submitted for review and approval prior to conducting any mitigation activities on the project site.

Contaminated sediment- One agency stated that the project site consists of an existing salt marsh and a managed freshwater impoundment that was originally used to grow rice (agriculture) and has been managed for wildlife habitat (recreational hunting). In addition, a portion of the project site appears to have been excavated to obtain fill material. They expressed concern about the potential for contamination on the project site as a result of these anthropogenic alterations.

The Corps also noted that a natural gas pipeline is located parallel to Savannah River and passes through the mitigation bank site. This pipeline is underground and there is no indication that there have been any leaks or discharges on the project site. In addition, the proposed work will not disturb any sediment that is located immediately adjacent to the existing natural gas pipeline.

The proposed mitigation activities consist of excavating an existing earthen embankment, removing water control structures, and placing the excavated material into the adjacent man-made ditches on the mitigation bank site. From the Corps' perspective, the earthen embankments on the project site were constructed using material that was excavated from these ditches, and this material is being returned to these ditches in order to restore natural hydrology and the land surface elevation.

The Corps does not believe the proposed restoration activities have the potential to adversely impact humans or aquatic life. For more than 30 years fresh water that was used to flood the project site for wildlife management has been discharged into the Savannah River through the existing water control structures. There is no indication that the discharge of water from the project site has adversely impacted the adjacent salt marsh. Likewise, there is no reason to believe that restoring natural tidal flows on the project site will adversely impact the adjacent marsh. Based on the past and current land uses, sediment testing is not considered necessary for the proposed project.

Credit release schedule- One agency stated that they are concerned about mitigation credits being used to offset unavoidable adverse impacts prior to the bank sponsor demonstrating success. The Charleston District uses a standard credit release schedule for mitigation banks. The initial credit release is dependent upon the Corps approving the Final MBI, the bank sponsor recording a conservation easement, and the bank sponsor documenting that the necessary financial assurances are in place.

Ecological suitability of the site- One agency stated that the elevation of the managed freshwater impoundment on the project site appears to be lower than the elevation of the salt marsh that is

located outside the earthen embankment. They stated that it will be difficult to establish tidal marsh vegetation on a large portion of the project site, and it will be decades before natural processes result in significant increases in marsh elevation.

The project site currently consists of salt marsh (preservation areas) and a managed freshwater impoundment. The proposed mitigation activities include removing an existing man-made earthen embankment, placing the excavated material into the adjacent man-made canals, and removing water control structures to allow the unrestricted flow of tidal water on the project site.

The natural areas that surround the mitigation bank site are subject to tidal flows and are also dominated by salt marsh vegetation. Although we appreciate concerns about the ability of the project site to support and/or develop salt marsh vegetation in a timely manner, the Corps recognizes the location and the landscape position of the mitigation bank site as conducive to the restoration, development, and the long-term sustainability of a healthy salt marsh.

Financial assurances- The Corps and several members of the IRT expressed concern about the need for financial assurances. The Final MBI includes cost estimates for the construction, monitoring, and long-term management of the project site. The bank sponsor will be required to submit the necessary financial assurances prior to receiving any credit releases.

Freshwater Control System- The existing freshwater canal that is located adjacent to the northern end of the proposed mitigation bank was constructed by the Savannah District, Corps of Engineers. According to the Savannah District, this freshwater canal is a portion of a Freshwater Control System that extends approximately 8 miles upstream and is currently undergoing rehabilitation. The Savannah District stated that the earthen embankment and water control structures that separate the project site from the existing freshwater canal must remain intact to prevent any adverse impacts to the existing Federal Project. Impacts to these structures are not required to restore aquatic resources within the freshwater impoundment on the project site.

Since one of the primary goals of the proposed mitigation bank is to restore natural tidal flows on the project site, the bank sponsor has stated that these water control structures will no longer be used (to obtain freshwater) if the mitigation bank is approved. From a long-term management perspective, the bank sponsor requested authorization to replace the existing water control structures with earthen plugs. However, the Savannah District stated that a separate evaluation of potential impacts to the existing Federal project wouid be required to obtain authorization to modify or alter the existing earthen embankment or water control structures.

Based on preliminary coordination with the Savannah District, the replacement of the existing water control structures associated with the freshwater canal cannot be authorized at this time. Additional coordination with both the Charleston District and the Savannah District will be required if the bank sponsor proposes to modify or alter the existing earthen embankment or water control structures associated with the existing Federal project in the future. A special condition is being included in the NWP 27 verification letter for the proposed mitigation bank to address this issue.

Historic natural condition of the mitigation bank site- A member of the public and one agency stated that the natural condition of the Savannah Harbor has been severely altered over time by manmade activities, such as harbor deepening. These commenters believe the freshwater-saltwater interface in the Lower Savannah River was historically found downstream of the project site and harbor deepening has resulted in saline water intruding further up the Savannah River. They suggest that the historic natural condition of the project is tidal freshwater marsh.

The Corps recognizes that a portion of the project site may have been a tidal freshwater marsh before the existing managed freshwater impoundment or the Savannah Harbor Federal navigation channel was constructed. However, the portion of the project site that is immediately adjacent to the Back River has been salt marsh for more than 30 years and we anticipate that it will continue to be salt marsh in the future. As described above, the Corps recognizes the location and the landscape position of the project site as conducive to the restoration, development, and the long-term sustainability of salt marsh vegetation.

Hydrogeomorphic Assessment Method (HGM) – The Corps and several members of the IRT objected to the use of a tidal HGM to evaluate the freshwater wetlands within the existing impoundment. Since HGM is designed to evaluate the existing functional capacity within a group of similar wetlands, a tidal HGM cannot be used to evaluate a non-tidal system. The lack of tidal flow within the existing freshwater impoundment results in a score of "0" for all of the salt marsh functions that are evaluated.

However, HGM is being used to evaluate the existing functions within the salt marsh reference areas and the salt marsh preservation areas on the project site. Once the mitigation activities on the project site have been completed, HGM will also be used to determine whether the salt marsh preservation areas and the salt marsh restoration areas on the project site are fully functional (comparable to the salt marsh reference areas).

Hydrology (Natural Tidal Flows)- Several agencies, including the Corps, stated that breaching the existing earthen embankment and removing the existing water control structures may not be sufficient to restore natural tidal flows throughout the project site. In response, the revised mitigation plan in the Final MBI includes the removal of the embankment that separates the managed freshwater impoundment from the Back River. According to the bank sponsor, the cross dikes that are located inside the existing impoundment are lower than the elevation of the tide and the entire mitigation bank site including the tops of these cross dikes will be submerged twice daily.

In-kind mitigation- Several agencies stated that the proposed mitigation bank may only be used to offset unavoidable adverse impacts to in-kind salt marsh. The Corps believes that a healthy salt marsh includes a variety of different habitats, such as vegetated salt marsh, mud flats, shallow open water areas, and open water channels. We anticipate that a similar variety of salt marsh habitats will develop on the project site. The credits generated by the mitigation bank will be used to offset adverse impacts to each of these salt marsh habitats.

Invasive species management- Several agencies expressed concern about the presence of invasive species, such as Chinese tallow (Sapium sebiferum), on the project site. The revised

mitigation plan in the Final MBI includes the removal of woody vegetation (including invasive species) prior to the excavation of the existing embankment. Since these species are not capable of surviving in areas that are inundated by salt water twice a day, no additional invasive species management activities are expected within the restoration areas on the project site.

Jasper Ocean Terminal- The Joint Project Office (JPO) has purchased 1517.78 acres of land in Jasper County and they are investigating whether a new port facility can be developed on the South Carolina side of the Savannah River. According to the JPO, some of the roadway and railway alternatives that are being evaluated for the Jasper Ocean Terminal would adversely impact the proposed mitigation bank site. The JPO believes the development of a mitigation bank on this property would conflict with their planning efforts for a new port facility.

The proposed Jasper Ocean Terminal is located adjacent to the Back River and downstream of the proposed mitigation bank. The Corps recognizes that the proposed mitigation bank may be adversely impacted by the development of a roadway and/or railway corridor if a new marine terminal is constructed in the future. Since the mitigation bank site will be protected by a conservation easement, future roadway and/or railway corridors will need to be designed to avoid and minimize potential impacts to the mitigation bank site. If a portion of the project site is condemned and developed in the future, the party that condemns and develops the land would be responsible for replacing any aquatic resource functions and services that are adversely impacted or lost on the project site.

Local Guidance Documents- In response to the Public Notice, one organization stated that the proposed mitigation bank relies on local guidance documents, such as the Charleston District's 2002 *Standard Operating Procedures for Compensatory Mitigation* (Mitigation SOP) and 2002 *Joint State/Federal Procedures for the Establishment of Mitigation Banks in South Carolina* (Joint Procedures), that were produced prior to the Mitigation Rule. The Corps does not believe this comment is relevant because all proposed mitigation banks are evaluated in accordance with the Mitigation Rule and must comply with the existing regulations (33 CFR 332).

The Corps directed the bank sponsor to delete the reference to the Joint Procedures that was included in their Prospectus, and to reference the Mitigation Rule in their Draft MBI. The Final MBI that was prepared by the bank sponsor correctly references the Mitigation Rule. As described below, the Proposed Mitigation Worksheet from the 2002 Mitigation SOP was used to calculate the mitigation credits generated by the proposed mitigation bank. Similar to other mitigation banks, permit applicants will be required to use the current (most recent) version of the Required Mitigation Worksheet to determine how many credits are required to offset adverse impacts to waters of the U.S. associated with a proposed project.

Loss of existing freshwater habitat- Several agencies expressed concern about the loss of existing freshwater habitat within the Savannah River estuary. The Corps recognizes that the Savannah River estuary has experienced losses in freshwater habitat as a result of upland development and the construction of the existing Savannah Harbor Federal navigation channel.

The proposed mitigation bank is located on a portion of the Savannah River/Back River that is dominated by tidal salt marsh. In fact, the only reason the mitigation bank site can be managed

as a freshwater impoundment is because an existing man-made canal (the Freshwater Control System described above) carries fresh water to the project site and several other upstream properties, such as the Savannah National Wildlife Refuge. Failure to maintain this existing freshwater canal, the earthen embankments, or the water control structures on the mitigation bank site would result in this area being converted into salt marsh.

From the Corps' perspective, the existing freshwater habitat on the project site is subject to manipulation and management by the property owner/bank sponsor (*e.g.*, similar to a farmed wetland). The proposed mitigation bank is expected to restore natural hydrology and will result in the development of a tidal salt marsh that does not require active management and will be both successful and sustainable within this portion of the Savannah River estuary.

Loss of managed freshwater impoundments- One agency claimed that management of the remaining intact rice fields is historically, culturally, and economically important, and these areas should receive the same protection as unaltered/fully functional wetlands and other waters of the United States. They stated that the freshwater impoundment (485 acres) on the proposed mitigation bank site represents 11.2% of the remaining intact rice fields within the Savannah River estuary. In addition, several agencies questioned whether the bank sponsor should be required to provide compensatory mitigation for the loss of any freshwater wetland functions and values that will be adversely impacted or lost if the project site is converted into a salt marsh.

As described below in Section 8.4, the cultural resources survey for the proposed project identified two previously unrecorded sites. One site (38JA1053) is considered eligible for the National Register of Historic Places (NRHP). The second site (38JA1054) is not considered eligible for the NRHP. However, it is protected by state legislation regarding the protection and preservation of unmaintained and abandoned cemeteries (SCCL 6-1-35, 16-17-600). The ground disturbing activities associated with the proposed project are not expected to impact either of these sites. In addition, SHPO concurred with the Mitigation Banking Instrument and the draft conservation easement that addresses the protection of these two sites.

As described below in Section 11.2, the existing freshwater impoundment on the project site could provide substantial wildlife benefits if it is managed similar to the existing freshwater impoundments on the Savannah National Wildlife Refuge (SNWR). However, these aquatic resource functions and services are not considered sustainable without active long-term management. The Corps is not aware of any authority to require a property owner (*i.e.*, bank sponsor) to use their own money to fund and implement Federal and/or State management recommendations on private property under these circumstances.

In accordance with the preamble of the 2012 Nationwide Permits, District Engineers have the discretion to determine what constitutes a "natural wetland" for the purposes of NWP 27. The preamble also states that changes in wetland plant communities that are caused by restoring wetland hydrology are to be considered wetland rehabilitation activities that are authorized by NWP 27 and are not to be considered conversion to another aquatic habitat type. *See* 77 Fed.Reg.10184, at 10215. NWP 27 also states that, "Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type." 77 Fed. Reg. 10184, at 10275.

Both the preamble and the language of NWP 27 itself expressly clarify that compensatory mitigation is not required for NWP 27 activities. As a result, Charleston District does not require compensatory mitigation when a property owner breaches a man-made structure and restores the natural hydrology of aquatic resources on a project site in accordance with NWP 27.

Mitigation bank acreage- One agency stated that only the excavated portion of the embankment and the ditches that are being filled should generate restoration credits. From the Corps' perspective, when a permit applicant constructs an impoundment, they are required to provide compensatory mitigation that offsets both the direct and indirect impacts associated with the proposed project (fill associated with the embankment and flooding within the footprint of the impoundment). Likewise, when a bank sponsor removes an impoundment and restores aquatic resources, the removal of the embankment and the restoration of the aquatic resources located within the footprint of the impoundment should generate mitigation credits.

Mitigation credits- As described above, the Corps and several members of the IRT objected to the bank sponsor's use of a tidal HGM to evaluate non-tidal freshwater areas. As a result, the Corps and members of the IRT also objected to using these HGM results to claim the maximum net improvement factor (4.0) for the portion of the mitigation bank site that is located inside the existing managed freshwater impoundment. However, as the proposed mitigation plan and the mitigation credit calculations were revised over the past 3 years, specific agency comments focused on different aspects of the proposed mitigation calculations:

> Net improvement factor- The Corps and several members of the IRT stated that the net improvement factor is a product of both the existing condition and the future condition of the mitigation bank site. The revised mitigation plan divided the mitigation bank site into separate units, and the net improvement factor for each unit takes into account the existing condition of the vegetation and hydrology within the unit and the future condition of the mitigation bank site once the mitigation activities have been completed. The mitigation calculations were revised, and the maximum net improvement factor (4.0) was only used for upland areas where fill material is being removed and fully functional salt marsh is being established.
>
> Preservation areas- Several agencies stated that the potential threat to the existing salt marsh (189 acres) on the mitigation bank site is low, and they objected to this area generating preservation mitigation credits. From the Corps' perspective, the preservation area provides the physical connection between the restoration areas on the mitigation bank site and the Back River/Savannah River. This area is an integral part of the overall mitigation bank site and should generate mitigation bank credits.
>
> Open water pond- One agency stated that the existing open water pond (32 acres) provides limited freshwater functions today and will provide limited salt water functions in the future. This agency also recommended filling this area to restore historic elevations, so this area may develop into salt marsh. The Corps recognizes that the existing open water pond may only be able to provide limited aquatic resource functions in the future. However, we believe that the benefits associated with filling the existing open water pond and establishing additional vegetated marsh on the mitigation bank site

do not outweigh the risks associated with conducting a large scale earth moving project in the middle of the proposed mitigation bank. The net improvement factor for this area was reduced to 1.0 in the Final MBI.

Need for salt marsh mitigation credits- One agency stated that State and Federal Regulatory programs do not allow for approval of permits that impact salt marsh; therefore, there is no need for salt marsh credits. Based on past experience, projects, such as port facilities, transportation projects, boat ramps, etc. result in unavoidable adverse impacts to salt marsh. Therefore, the Corps recognizes that there is a reasonable need for salt marsh mitigation credits.

Performance standards- The Corps and several members of the IRT stated that reference sites should be used to establish vegetation (species composition, density, coverage, etc) and hydrology (salinity, duration of inundation) performance standards. One agency also recommended that the bank sponsor compile a list of healthy salt marsh indicators (e.g. benthic invertebrate community structure, total species diversity, linear feet of marsh edge, stem density per square meter) and develop performance standards for each indicator. This agency suggested that fisheries and invertebrate monitoring be conducted in both summer and winter to account for variations in species presence.

At this time, the portion of the project site that is located inside the existing impoundment is not subject to tidal flows and does not support salt marsh vegetation. The performance standards that were included in the Final MBI require the bank sponsor to document tidal flows, species composition, vegetation coverage, fish, and macroinvertebrates on the mitigation bank site. This information will be compared to data gathered at the reference areas to determine whether the mitigation bank site develops into a fully functional tidal marsh. For example, the bank sponsor used HGM to evaluate both the preservation areas on the project site and a reference area that is located downstream of the project site. The Corps believes this level information will be sufficient to determine whether the mitigation bank site is developing into a fully functional salt marsh.

Preservation areas- One agency stated that the preservation area on the mitigation bank site has been allowed to naturalize over the past 50-60 years. However, the main drainage canal is still readily visible on aerial photography and only some open water areas are exhibiting sinuosity. Since the revised mitigation plan in the Final MBI does not address open water channels on the project site, it is likely that the project site will still be somewhat impaired after the mitigation activities are completed. According to HGM, the preservation area on the project site provides comparable functions and services to fully functional salt marsh areas in the Savannah River watershed. The Corps agrees that the existing cross dikes and ditches will probably be visible after the mitigation activities are completed. However, we do not believe that additional earth moving work should be conducted on the project site unless it is required for adaptive management (e.g. to increase tidal flows throughout the project site).

Reference site- Several agencies objected to the use of the preservation area on the mitigation site as a reference area. However, other agencies recommended using this same area as a reference area. The Corps believes that the preservation area must be monitored to determine whether it is a fully functional salt marsh today and to confirm whether it continues to be a fully

functional salt marsh in the future. However, we also believe that additional reference areas are required to evaluate the full range of hydrology, salinity, and vegetation (*Spartina alterniflora* and *Juncus* spp.) that are expected on the project site. The revised monitoring plan in the Final MBI includes information about additional salt marsh reference areas.

Sale of mitigation credits: One agency stated that they will object to any mitigation plans that consist of purchasing credits from the proposed mitigation bank. The Corps believes that the revised mitigation plan in the Final MBI will restore tidal salt marsh and should be allowed to offset unavoidable adverse impacts to aquatic resource functions and services authorized by Department of the Army permits.

Savannah Harbor Expansion Project (SHEP) – A member of the public and several agencies expressed concerns about the potential impact of SHEP on the proposed mitigation bank. One agency recommended that the bank sponsor develop a monitoring plan to detect potential changes within the preservation areas on the project site and an adaptive management plan.

According to the EIS that was prepared for SHEP, harbor deepening is expected to increase salinity within the Savannah River and the adjacent marshes. Existing tidal freshwater wetlands will be converted into brackish marsh, and existing brackish marsh will be converted into tidal salt marsh. In order to avoid and minimize these potential impacts, the SHEP mitigation plan includes measures to increase freshwater flow into the Back River and measures to reduce saltwater flow up the Back River. In addition, SHEP includes a post-construction monitoring and adaptive management plan that will be used to modify the Federal navigation channel and/or the proposed mitigation measures to ensure the levels of environmental effects predicted in the EIS are not exceeded.

Similar to other existing, tidal salt marsh areas, salinity on the mitigation bank site and within the reference areas on the Back River vary due to daily and seasonal changes in freshwater flows (storm events, rainfall, drought, releases from upstream dams, etc) and changes in tidal flows (monthly and daily tide cycles, etc). As a result, the performance standard for salinity on the mitigation bank site is very broad (5 parts per thousand (ppt) and 25 ppt)).

As described above, the construction of SHEP is expected to increase salinity within the Back River and the adjacent salt marsh. The SHEP mitigation plan and adaptive management plan are intended to reduce these potential impacts. We anticipate that any wide scale changes to salinity within the Savannah River and the Back River, which includes the mitigation bank site, will fall within the broad range of natural salinities that occur within this area today.

The monitoring plan for the proposed mitigation bank includes data gathering (vegetation, salinity, and hydrology) within preservation areas and restoration areas on the mitigation bank site and within reference areas that are located immediately adjacent to the Back River. From the Corps perspective, the restoration of natural tidal flows on the project site is considered beneficial regardless of the salinity.

Site Protection Instrument- USFWS originally stated that acquisition of the project site was a high priority for the Savannah National Wildlife Refuge (SNWR). However, USFWS declined

the bank sponsor's offer to transfer the mitigation bank site to the SNWR once the approved mitigation plan was determined to be fully successful. It is our understanding that the bank sponsor is planning to retain ownership of the mitigation bank site. The Final MBI includes a draft conservation easement that will be used to protect the mitigation bank site.

Service area- The Corps and several members of the IRT objected to the proposed service area that was included in the Prospectus. The overall size of the service area was reduced, and it was divided into primary, secondary, and tertiary service areas that extend into adjacent drainage basins. One agency stated that the primary service area of the proposed mitigation bank should be limited to salt marsh areas within the same 8-digit HUC as the mitigation bank site (Lower Savannah River) and the secondary service area should be limited to the adjacent 8-digit HUC (Calibogue Sound/Wright River) within the same major drainage basin. Another agency recommended a smaller secondary and tertiary service area.

One agency stated that the proposed mitigation bank will benefit fishery resources in both South Carolina and Georgia. They recommended that the bank sponsor notify the Savannah District that the proposed mitigation bank may be eligible to offset impacts in the adjacent 8-digit HUC in Georgia. One organization stated the overall size of the proposed service area lowers the incentive for other bank sponsors to propose salt marsh mitigation banks. This organization believes salt marsh mitigation banks are needed in strategic locations in other coastal watersheds.

The Final MBI clarifies that the primary service area is limited to the salt marsh portion of the two 8-digit HUCs within the Savannah River watershed. The secondary and tertiary service areas consist of the salt marsh portion of other watersheds along the South Carolina coast. If a new salt marsh mitigation bank is established in another watershed, the bank sponsor for the Clydesdale Mitigation Bank may lose the ability to sell mitigation credits in their secondary and/or tertiary service area because in-kind mitigation credits within the same watershed as the authorized impacts to waters of the United States will be considered environmentally preferable.

Standard Operating Procedures for Compensatory Mitigation (2002 Mitigation SOP) – The bank sponsor submitted the Prospectus and the Corps issued a Public Notice for the proposed mitigation bank more than one year before the Charleston District's Guidelines for Preparing a Complete Mitigation Plan (2010) were released. Recognizing that the 2010 Mitigation Guidelines would be implemented before the proposed mitigation bank could be reviewed and approved, the Corps met with the bank sponsor in 2010 to discuss whether they would be allowed to use the 2002 Mitigation SOP to calculate the credits generated by the proposed mitigation bank.

In accordance with both the 2002 Mitigation SOP and the 2010 Mitigation Guidelines, credits generated by a proposed mitigation bank should be calculated using the Charleston District's current local guidance document. However, mitigation credits required for unavoidable adverse impacts to aquatic resource functions and services should be calculated using the most recent version of the Charleston District's local guidance document. Although several agencies objected, the Corps determined that the bank sponsor should be allowed to use the worksheets in the 2002 Mitigation SOP for the proposed mitigation bank. As described above, projects that

propose to purchase mitigation credits from the proposed mitigation bank will be required to use the worksheets in the most recent version of the Charleston District's local guidance document, the 2010 Mitigation Guidelines.

In addition, the bank sponsor attempted to use the factors and values in the Charleston District's 2002 Mitigation SOP as a surrogate for a functional assessment tool on the mitigation bank site. Although local guidance documents have been used to calculate the number of mitigation credits required to offset a proposed project for many years, these worksheets incorporate programmatic factors (such as cumulative impacts and the likelihood of success and sustainability) and cannot be used to estimate or assess aquatic resource functions on the mitigation bank site. The Corps and several agencies objected to this misuse of the 2002 Mitigation SOP, and this information was eventually deleted from both the MBI and the BMFAR, as described above.

Submerged lands- SCDHEC stated that the bank sponsor must submit a State, King's, or Lord Proprietor's Grant, an attorney's title opinion, and an abstract of title if any existing tidal areas or submerged lands will be included in the proposed mitigation bank. This information is included in the Final MBI.

Tribal Coordination- The Corps received written comments from the Catawba Indian Nation in response to the September 2009 Public Notice for the proposed mitigation bank. The Catawba Indian Nation requested to be notified if Native American artifacts and/or human remains are discovered during the ground disturbance phase of this project. A special condition requiring the permittee to notify this office immediately if any previously unknown historic or archaeological remains are found on the project site is being included in the NWP 27 verification letter for the proposed mitigation bank to address this issue. No additional coordination with the Catawba Indian Nation is required for the proposed project.

Wildlife management and habitat- One public comment stated that South Carolina is part of the Atlantic Flyway and provides important wintering habitat for waterfowl. The commenter stated that managed freshwater impoundments (rice fields) have provided relatively stable functions and values over the past century for waterfowl and wildlife. The commenter believes the proposed mitigation bank will change the habitat from one wetland type to another wetland type with a resulting loss in function and value to waterfowl and other wetland wildlife. Likewise, one agency stated that it can provide a landowner with recommendations about how to manage an impoundment in the manner that is most beneficial to fish and wildlife resources. However, it cannot make a landowner follow its recommendations or make a landowner maintain the existing embankments and water control structures so that a freshwater impoundment continues to be intact.

The Corps recognizes that actively managed areas may provide greater functions and values for waterfowl and wildlife. However, the location and the landscape position of the project site are conducive to the restoration, development, and the long-term sustainability of salt marsh habitat. The Corps recognizes that the project site will provide greater aquatic resource functions and services to the surrounding watershed as a passively managed salt marsh habitat.

SAC 2009-00756

6. Alternatives Analysis

6.1 **Proposed Project:** The proposed project consists of the establishment and operation of a salt marsh mitigation bank on the project site. The proposed mitigation activities include the preservation of 208 acres of existing tidal salt marsh, and the restoration of 485 acres of tidal salt marsh. As described in the final MBI, a conservation easement will be recorded to protect aquatic resources and cultural resources on the project site, and natural hydrology (the ebb and flow of tidal waters) will be allowed to enter the project site and salt marsh vegetation will be allowed to naturally revegetate on the project site. Mitigation credits generated by the proposed project may be sold to offset unavoidable adverse impacts to waters of the U.S. authorized by Department of the Army (DA) permits within the approved service area.

6.1.1 Onsite Configurations: The original mitigation work plan consisted of the removal of water control structures and the construction of breaches in the earthen embankments to restore natural tidal flows on the project site. The Corps requested additional information to determine whether the proposed openings would be sufficient to provide unrestricted tidal flows on the project site. In response, the bank sponsor proposed to remove the primary embankment that is located between the tidal salt marsh and the freshwater impoundment on the project site. The excavated material will be used to fill the adjacent ditches and restore natural elevations on the project site.

According to the bank sponsor, the cross dikes that are located inside the existing freshwater impoundment do not need to be removed because they will be submerged during normal high tides. Salt marsh vegetation is expected to develop on top of these cross dikes once hydrology is restored on the project site. The Corps encouraged the bank sponsor to excavate as many of the existing embankments and to backfill as many of the existing ditches as possible on the project site to restore natural elevations and to eliminate any adverse impacts associated with the former rice fields.

6.2 **No Action Alternative:** The establishment and operation of a compensatory mitigation bank is a process that is specific to the Corps' regulatory program. The Mitigation Rule (33 CFR 332) describes the procedures for reviewing and approving a proposed mitigation bank. It is our understanding the bank sponsor purchased the project site to develop a commercial mitigation bank. If the proposed mitigation bank is not approved, the freshwater impoundment on the project site will probably continue to be managed for private, recreational purposes.

Although the proposed work in waters of the U.S. complies with the terms and conditions of NWP 27, the bank sponsor probably would not restore the aquatic resources on the project site if these activities do not generate mitigation credits that can be sold to offset unavoidable adverse impacts to waters of the U.S. authorized by DA permits. Likewise, the sponsor probably would not protect the aquatic resources on the project site with a conservation easement if it could not sell mitigation credits.

6.3 Criteria for Evaluating Alternatives

Factor	Measurement or Constraint
Impacts to Waters of the U.S.	Degree of impact
Water Quality	Potential for poor water quality
Impacts to Fish and Wildlife	Available habitat
Floodplain Values	Flood Reduction/Ability to handle storm flows
Invasive species	Degree of impact
Availability of Mitigation Credits	Ability to offset unavoidable adverse impacts to waters of the U.S.

6.4 Alternatives

6.4.1 **Proposed Project:** The proposed project will result in the removal of an existing earthen embankment (0.72 acres) that is located in navigable waters of the U.S. and the placement of fill material in existing open water ditches (0.67 acres). The proposed work will restore natural elevations and will not result in a loss of waters of the U.S. These areas will be inundated by the ebb and flow of the tide and will increase the total acreage of waters of the U.S. on the project site. In addition, waters of the U.S. that are currently located inside the existing freshwater impoundment (485 acres) will no longer be subject to management activities such as mowing, flooding, planting, etc. These areas will be allowed to develop into a fully functional salt marsh rather than being subjected to periodic disturbances for private, recreational purposes.

In addition, once the earthen embankment and water control structures are removed, hydrology within the freshwater impoundment will no longer be regulated by wildlife management activities. The Corps anticipates that water quality will improve on the project site because water will be exchanged twice a day by tidal flows rather than impounded on the project site for longer periods of time. In addition, removal of the earthen embankment will increase the acreage of the floodplain by 485 acres. Storm flows and/or flood waters will be able to spread throughout the project site.

Invasive species, such as Chinese tallow, were identified within the shrub/scrub and forested wetlands inside the existing freshwater impoundment. Once natural tidal flows are restored, freshwater species will not be able to survive in the restored salt marsh areas on the project site. As the project site develops into a fully functional salt marsh, it will provide salt marsh fish and wildlife habitat rather than freshwater fish and wildlife habitat.

Finally, the purpose of the proposed project is to construct and operate a commercial salt marsh mitigation bank. If the proposed project is approved, mitigation credits will be available to offset unavoidable adverse impacts to waters of the U.S. authorized by DA permits.

6.4.2 **No Action Alternative:** As described above, if the proposed mitigation bank is not approved, the freshwater impoundment on the project site would probably continue to be managed for private, recreational purposes. Waters of the U.S. that are located inside the freshwater impoundment (485 acres) will continue to be subject to periodic disturbances, such as mowing, flooding, planting, etc. In addition, water quality within the freshwater impoundment would continue to be adversely impacted by the use of pesticides and herbicides in fields that are mowed and planted for wildlife. Likewise, poor water quality may result from impounding freshwater on the project site.

The embankment and water control structures that are located between the tidal salt marsh and the freshwater impoundment would continue to prevent storm flows and/or flood waters from entering 485 acres on the project site. Invasive species, such as Chinese tallow, would continue to grow within the shrub/scrub and forested wetlands inside the existing freshwater impoundment and the freshwater impoundment on the project site currently supports freshwater fish and wildlife. Once natural hydrology is restored, this portion of the project site would provide salt marsh fish and wildlife habitat.

Finally, if the proposed project is not approved, salt marsh mitigation credits will not be available to offset unavoidable adverse impacts to waters of the U.S. Permit applicants would continue to be required to conduct small, permittee-responsible mitigation plans that are less likely to be successful or sustainable.

7.0 **Public Interest Review:** All public interest factor determinations have been made as summarized here. Both cumulative and secondary impacts were considered.

Conservation: Long term beneficial. As described above, a conservation easement will be recorded to protect aquatic resources and cultural resources on the project site.

Economics: Long term beneficial. The construction and operation of the proposed mitigation bank will result in short-term benefits to local contractors and consultants. In addition, mitigation credits generated by the proposed project will be sold to offset unavoidable adverse impacts to waters of the U.S. authorized by DA permits, which will result in long-term economic benefits within the approved service area. The availability of compensatory mitigation credits should facilitate the review and approval of projects that result in unavoidable adverse impacts to waters of the U.S.

Aesthetics: Negligible. The portion of the freshwater impoundment that is located immediately adjacent to U.S. Highway 17 has not been mowed recently and has been allowed to develop into shrub/scrub and forested freshwater wetlands. These trees and shrubs provide a visual barrier between U.S. Highway 17 and the Back River. The mitigation activities on the project site will result in the removal of the existing trees and shrubs and the restoration of emergent salt marsh species on the project site. The Corps recognizes that the proposed project will alter the view from US Highway 17 toward the Back River. However, the Corps believes the unobstructed view of the Back River across a vegetated natural area (emergent salt marsh) will have either a negligible or a long-term beneficial impact on aesthetics.

General Environmental Concerns: Long term beneficial. "The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by Department of the Army permits" (33CFR332.3(a)). As described in the Mitigation Rule, compensatory mitigation "should be located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses" (33CFR332.3(b)).

As described above, a portion of the project site consists of a fully functional salt marsh and the remainder of the project site is managed as a freshwater impoundment for recreational purposes. Once the embankment that is adjacent to the Back River is breached and the entire mitigation bank site is subject to the natural ebb and flow of the tide, the project site is expected to develop into a fully functional salt marsh. Since the proposed mitigation bank site is located within the Savannah River estuary and has been surrounded by fully functional salt marsh for many years, the Corps anticipates that the additional salt marsh on the project site will be both successful and sustainable.

Mitigation credits generated by the preservation and restoration of salt marsh on the proposed mitigation bank site will be used to offset unavoidable adverse impacts to salt marsh authorized by DA permits. As described in the Mitigation Rule, the purchase of credits from a mitigation bank is considered environmentally preferable "because [mitigation banks] usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success" (33 CFR332.3(a)).

Wetlands: Long term beneficial. The freshwater impoundment on the project site is currently managed for recreational purposes. As a result, vegetation and hydrology are manipulated on a regular basis. Once the earthen embankment is removed and natural hydrology (the ebb and flow of the tide) is restored, this area will develop into a fully functional salt marsh. As described above, the tidal salt marsh on the project site will be protected by a conservation easement.

Historic and Cultural Resources: Long term beneficial. As described above, archeological sites and a cemetery on the project site will be protected by a conservation easement.

Fish and Wildlife Values: Long term beneficial. The freshwater impoundment on the project site is currently managed for recreational purposes. SCDNR and USFWS objected to the proposed project because they believe the existing freshwater impoundment should be actively managed similar to the Savannah National Wildlife Refuge (*i.e.*, to benefit freshwater fish and wildlife values). However, the project site is privately owned and decisions regarding the current and future management of the project site are dependent upon the desires of the property owner. The proposed project is expected to restore natural hydrology on the project site and to protect aquatic resources using a conservation easement. As a result, the project site is expected to support a fully functional tidal salt marsh and the full suite of fish and wildlife values associated

with a tidal salt marsh. The Corps recognizes that the fish and wildlife values associated with a freshwater impoundment are different than the fish and wildlife values associated with a tidal salt marsh. However, we believe the passive management of a fully functional tidal salt marsh is more likely to provide long-term benefits to fish and wildlife values than expecting a private property owner to actively manage the project site for freshwater fish and wildlife values.

Flood Hazards: Long term beneficial. The proposed project is located within the 100-year floodplain of the Savannah River. The restoration of aquatic resources on the project site will result in the removal of an earthen embankment and water control structures that could be damaged or destroyed during a storm event. In addition, the elimination of these man-made features and the restoration of tidal marsh vegetation throughout the project site will reduce the potential for erosion if these man-made features failed during a storm event.

Floodplain Values: Long term beneficial. The proposed project is located within the 100-year floodplain of the Savannah River. The existing earthen embankment and water control structures on the project site limit the extent of the existing floodplain. Removal of these man-made structures provides additional areas where storm and flood flows may extend, reducing the potential for impacts to upstream and/or downstream properties.

Land Use: Long term beneficial. The proposed project consists of the establishment and operation of a mitigation bank within the 100-year floodplain of the Savannah River. Based on the elevation of the project site and adjacent properties, this area is not suitable for development. However, the Joint Project Office stated that they are evaluating potential alternatives for roadway or railway access to a future port facility on the Savannah River. The JPO stated that some of these alternatives pass through the proposed mitigation bank site. Based on the available information, this future port facility and the associated transportation infrastructure are considered speculative. If a new port facility is developed and the transportation infrastructure adversely impacts the proposed mitigation bank, the JPO will be required to replace any aquatic resource functions or ecological services that are lost on the project site. The proposed mitigation bank is located in the correct landscape position for tidal salt marsh restoration and is considered compatible with the adjacent land uses.

Navigation: Negligible. The project site is located immediately adjacent to the Back River portion of the Savannah River. Recreational boaters currently have access to open water channels and tidal salt marsh areas on the project site. Once the existing earthen embankment and water control structures are removed, recreational boaters may have access to additional areas on the project site.

Shore Erosion and Accretion: Negligible. The project site is located immediately adjacent to the Back River portion of the Savannah River. The tidal salt marsh on the project site extends more than 2,000 feet from the edge of the river and is considered stable. Once the existing earthen embankment and water control structures are removed, the tidal salt marsh on the project site will extend more than 2 miles from the edge of the Back River. Since the existing tidal salt marsh is already considered stable, this additional width will have a negligible effect on shore erosion and accretion.

Recreation: Long term beneficial. As described above, the project site is located immediately adjacent to the Back River portion of the Savannah River. Recreational boaters currently have access to open water channels and tidal salt marsh areas on the project site. Once the existing earthen embankment and water control structures are removed, recreational boaters may have access to additional areas on the project site.

Water Supply and Conservation: Neutral. The Freshwater Control System that was constructed by the Savannah District in the 1970s provides fresh water to the SNWR and several private property owners that manage freshwater impoundments adjacent to the Savannah River. The development of a salt marsh mitigation bank on the project site may eliminate the need to divert a portion of this fresh water from the Savannah River in the future. Therefore, more fresh water may be available in the Savannah River for other uses.

Water Quality: Long term beneficial. The proposed project will restore natural hydrology on the project site. Once the existing earthen embankment and water control structures are removed, the ebb and flow of tidal waters will reduce the potential for adverse impacts associated with stagnant water on the project site. In addition, SCDHEC issued a Critical Area Permit for the proposed project.

Energy Needs: Neutral.

Safety: Neutral.

Food and Fiber Production: Neutral.

Mineral Needs: Neutral.

Considerations of Property Ownership: Long term beneficial. Since most areas that are subject to the ebb and flow of the tide are considered state waters, SCDHEC requested additional information about the ownership of the project site. The Final MBI includes a copy of a grant that was issued by the Governor of South Carolina in the 1800s for a tract of land that includes the entire project site. It is our understanding that this grant meets the needs of SCDHEC and documents the ownership of both the freshwater and the salt marsh portion of the project site.

As several members of the IRT pointed out during review of the proposed project, management decisions by the property owner determine both the vegetation type and hydrology conditions on the project site. For example, the property owner may decide to grow trees, to grow crops, to flood the project site with fresh water, or to flood the project site with salt water. The Corps does not have a role in land management decisions that are made by individual property owners on private land, where such activities do not require DA authorization. However, the property owner has proposed to develop a mitigation bank on the project site.

The Corps recognizes that freshwater impoundments can be managed to provide substantial wildlife benefits. For example, similar impoundments at the Savannah National Wildlife Refuge (upstream from the project site) are managed for waterfowl and wading birds. While this form of active management provides valuable freshwater habitat, it requires a philosophical and

financial commitment by the property owner who is neither statutorily nor lawfully required to manage the site in such a manner.

Needs and Welfare of the People: Long term beneficial. Mitigation credits generated by the preservation and restoration of salt marsh on the proposed mitigation bank site will be used to offset unavoidable adverse impacts to salt marsh authorized by DA permits. As described in the Mitigation Rule, the purchase of credits from a mitigation bank is considered environmentally preferable "because [mitigation banks] usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success" (33 CFR332.3(a)).

8. Effects, Policies and Other Laws

8.1 **Public Interest Factors:** See section 6.

8.2 **Endangered Species Act:** The project site is located immediately adjacent to the Savannah River and a portion of the project site (208 acres) is subject to the ebb and flow of the tide. The remainder of the project site 485 acres is not subject to tidal flows because existing earthen embankments, a freshwater canal, and water control structures allow the project site to be managed as a freshwater impoundment.
Name of species present: West Indian manatee (*Trichechus manatus*), shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), and wood stork (*Mycteria americana*).
Potential or Critical Habitat present: No
Effects determination: No effect
Date of Service(s) concurrence: N/A
Basis for "no effect" determination: Although manatees and sturgeon are known to occur in the Savannah River and wood storks are known to forage in tidal marshes adjacent to the Savannah River, the proposed project consists of removing an existing embankment and water control structures. The proposed project is expected to increase the total acreage of open waters and emergent marsh on the project site that are subject to the ebb and flow of the tide.
Additional information (describe steps taken to address concerns, as needed): N/A

8.3 **Magnuson-Stevens Fishery Conservation and Management Act** (Essential Fish Habitat): The project site is located immediately adjacent to the Savannah River and a portion of the project site (208 acres) is subject to the ebb and flow of the tide. The remainder of the project site (485 acres) is not subject to tidal flows because existing earthen embankments, a freshwater canal, and water control structures allow the project site to be managed as a freshwater impoundment.
Name of species present: Estuarine Emergent Wetlands, Estuarine Water Column
Effects determination: No effect.
Date of Service(s) concurrence: On December 8, 2011, NMFS indicated its support for the proposed work (*i.e.*, removing the dikes). However, NMFS expressed concerns about the proposed service area, the lack of an adaptive management plan to monitor potential impacts

associated with the construction of the Savannah Harbor Expansion Project, and the proposed net improvement factor for marsh conversion areas and the larger lakes/canals.
Basis for "no effect" determination: The proposed project consists of removing the existing earthen embankment and water control structures, which will increase the total acreage of Estuarine Emergent Wetlands and Estuarine Tidal Waters on the project site.
Additional information: N/A

8.4 **Section 106 of the National Historic Preservation Act:**
Survey required/conducted: Yes. The final report, entitled "Cultural Resources Survey of Clydesdale Plantation Tract," was submitted to the State Historic Preservation Office (SHPO) and SC Institute of Archaeology and Anthropology (SCIAA) and was accepted by SHPO on December 30, 2011.
Effects determination: No adverse effect
Rationale: The cultural resources survey of the project site identified two previously unrecorded sites. One site (38JA1053) is considered eligible for the National Register of Historic Places (NRHP). However, the ground disturbing activities associated with the proposed project are not expected to impact this area. The second site (38JA1054) is a cemetery and is not considered eligible for the NRHP. However, the second site is protected by state legislation regarding the protection and preservation of unmaintained and abandoned cemeteries (SCCL 6-1-35, 16-17-600). The draft conservation easement for the proposed mitigation bank includes a section that addresses the protection of these two sites. In addition, a special condition requiring the permittee to notify this office in the event that any previously unknown historic or archaeological remains are found on the project site is being included in the NWP 27 verification letter for the proposed project.
Date consultation complete: SHPO reviewed and approved the draft conservation easement on August 3, 2012.
Additional information: N/A

8.5 **Secondary / Indirect Effects**
The proposed project consists of constructing and operating a commercial salt marsh mitigation bank on the project site. Since the project site is privately owned and is managed for recreational purposes, the restoration of vegetation and hydrology on the project site is not expected to adversely impact any adjacent property owners. However, the removal of the existing earthen embankment will result in the displacement of freshwater species that currently use the project site. Upland mammals and migratory birds that use the project site will be forced to move upstream to locate suitable freshwater habitat. Similar freshwater impoundments are managed by the SNWR and private property owners near the project site.

In addition, it is our understanding the bank sponsor has purchased an adjacent property and they may propose to expand this mitigation bank in the near future. From a construction standpoint, there may be advantages to restoring hydrology on both properties at the same time.

8.6 **Cumulative Effects**
As described above, the project site is privately owned and is managed for recreational purposes. The approval of the proposed mitigation bank will result in the development of a fully functional salt marsh on the project site. From the Corps' perspective, mitigation banks are a valuable

resource and they are critical to the successful operation of the Corps' regulatory program. As described in the Mitigation Rule (33CFR332.3(b)), mitigation banks are more likely to be successful and sustainable than a number of small permittee-responsible mitigation plans. The restoration of aquatic resources on the mitigation bank site ensures that unavoidable adverse impacts to salt marsh habitats associated with numerous small projects, such as boat ramps and other water dependent activities, within the approved service area will be offset by appropriate compensatory mitigation.

One commenter questioned whether the large service area associated with the proposed mitigation bank would discourage the development of additional salt marsh mitigation banks within adjacent watersheds. From the Corps' perspective, the approval of a mitigation bank does not prevent the approval of additional mitigation banks within the same watershed (USGS 8-digit HUC) or adjacent watersheds. Permit applicants are required to identify potential sources of mitigation credits within the same watershed as a proposed project.

If a new mitigation bank is established within the same watershed as an existing mitigation bank (and both banks can provide the appropriate number and type of mitigation credits to offset impacts associated with a proposed project), the mitigation banks must compete for credit sales. However, if a new mitigation bank is established in an adjacent watershed, mitigation credits from the new mitigation bank will normally be considered environmentally preferable for adverse impacts in the adjacent watershed. From the Corps' perspective, the limiting factor for the development of additional mitigation banks is the demand for mitigation credits. If the demand for salt marsh mitigation credits is not sufficient to support a second mitigation bank in the same watershed or an adjacent watershed, the likelihood of a proposal for a second mitigation bank is diminished.

9.0 **Need for a DA Permit:**

9.1 **Waters of the US:** The aquatic resources on the project site include open waters and vegetated salt marsh that are subject to the ebb and flow of the tide (Traditional Navigable Waters), and open waters and freshwater wetlands that are separated from the adjacent tidal waters by a manmade earthen embankment. All of these aquatic resources are considered adjacent to the Back River portion of the Savannah River and are jurisdictional.

9.2 **Nationwide Permit 27 Verification Letter:** Similar to other mitigation banks in South Carolina, NWP 27 is being used to authorize restoration activities in waters of the U.S. associated with the proposed project. A separate Memorandum for the Record (NWP 27 Verification) dated April 16, 2013 has been prepared by the Corps to document that the proposed work in waters of the U.S. complies with the terms and conditions of NWP 27. In addition, SCDHEC has also evaluated the proposed project and issued a Critical Area Permit for the proposed project. The applicant may conduct the proposed restoration activities in accordance with the approved permit drawings whether or not they move forward with the proposed mitigation bank.

Special conditions are included in the NWP 27 verification letter to insure the proposed activity would result in no more than minimal individual and cumulative adverse environmental effects and would not be contrary to the public interest.

10.0 Compliance with Other Federal Laws: Compliance with the Endangered Species Act, Magnuson Stevens Act (Essential Fish Habitat), and Section 106 of the National Historic Preservation Act are addressed in Section 8.0. As described above, the Corps' overall review of the proposed mitigation bank includes the restoration activities in waters of the U.S. that are described in the proposed mitigation work plan in the Final MBI.

10.1 Wild and Scenic Rivers Act:
Project located on designated or "study" river: No

10.2 Water Quality Certification under Section 401 of the Clean Water Act:
Individual certification required: Yes. SCDHEC's General Conditions for the 2012 Nationwide Permit's require the permit applicant to obtain an individual Critical Area Permit for all projects that impact critical areas.

10.3 Coastal Zone Management Consistency/Permit:
Individual certification required: Yes. SCDHEC's General Conditions for the 2012 Nationwide Permit's require the permit applicant to obtain an individual Critical Area Permit for all projects that impact critical areas. SCDHEC issued a Critical Area Permit for the proposed project on December 17, 2012. A Request for Final Review was submitted by the Southern Environmental Law Center. SCDHEC's Board denied SELC's request and upheld the SCDHEC staff decision. It is the Corps' understanding that SELC has filed a Request for a Contested Case Hearing with the South Carolina Administrative Law Court.

10.4 **Corps Wetland Policy**
Based on the public interest review herein, the beneficial effects of the proposed project outweigh the detrimental effects: **Yes**
The proposed mitigation bank is expected to restore aquatic resource functions and ecological services on the project site.

10.5 **Effect on Federal Projects**
The proposed project **will not** have an adverse effect on any Federal project.
As described above, the proposed project is located immediately adjacent to an existing fresh water canal that was constructed as mitigation for adverse impacts associated with deepening the Savannah Harbor Federal navigation channel. Based on our coordination with Savannah District, the proposed project will not adversely impact Savannah District's ability to maintain the existing freshwater canal.

10.6 **Effects on the limits of the territorial seas**
The proposed project **will not** alter the coastline or baseline where the territorial sea is measured for purposes of the Submerged Lands Act and international law.

10.7 **Safety of impoundment structures**
The bank sponsor demonstrated that impoundment structures comply with established dam safety criteria or have been designed by qualified persons and independently reviewed: **Not Applicable**
The proposed project includes the removal of an earthen embankment that is associated with a former rice field. Once the embankment is removed, there will no longer be a freshwater impoundment on the project site.

10.8 **Activities in Marine Sanctuaries**
If the proposed project would occur in a marine sanctuary, certification from the Secretary of Commerce was received: **Not Applicable**

10.9 **Other Authorizations**
As described above in Section 9.0, the Corps evaluated the proposed project and determined that it meets the terms and conditions of Nationwide Permit 27. Likewise, SCDHEC issued a Critical Area permit for the proposed project.

10.10 **Significant Issues of Overriding National Importance**
Not applicable.

11.0 General evaluation criteria under the public interest review
The following were considered in this document:

11.1 **The relative extent of the public and private need for the proposed structure or work**
The proposed project consists of establishing and operating a compensatory mitigation bank. In accordance with the Mitigation Rule (33 CFR 332), mitigation banks are the preferred method of offsetting unavoidable adverse impacts to waters of the U.S. authorized by DA permits. The successful restoration of aquatic resources on the project site will generate salt marsh mitigation credits that may be used to offset unavoidable adverse impacts to salt marsh in the future. The Corps considers this a benefit because permit applicants will have the option of purchasing mitigation credits or developing a permittee-responsible mitigation plan that maintains and/or improves the quality of the watershed.

11.2 **Unresolved conflicts as to resource use**
There **are** unresolved conflicts as to resource use
Alternative to resolve conflict: There are no reasonable or practicable alternative locations or methods to accomplish the objective of the proposal.
As described above, USFWS and SCDNR believe the existing freshwater impoundment on the project site could provide substantial freshwater wildlife benefits if it is managed similar to the existing freshwater impoundments on the Savannah National Wildlife Refuge (SNWR). However, the Corps is not aware of any agency or entity that has the authority to require a property owner (*i.e.*, bank sponsor) to follow non-mandatory Federal and/or State recommendations when managing private property.

If USFWS and/or SCDNR would like to manage the freshwater impoundment on the project site to meet their own needs, they would need to purchase the property from the bank sponsor. We

are not aware of any efforts by USFWS or SCDNR to purchase the project site. Likewise, USFWS did not forward the proposed project to their Regional Administrator/Regional Director in accordance with the Dispute Resolution Process for mitigation banks. Therefore, the proposed project was not elevated for higher level review in accordance with 33 CFR 332.8(e). The proposed mitigation bank is being reviewed and approved by the Corps over the objections of USFWS and SCDNR.

The bank sponsor, as the property owner, has proposed to develop a tidal salt marsh mitigation bank on the project site. Once natural hydrology has been restored throughout the project site, salt marsh vegetation will be allowed to revegetate the area inside the existing freshwater impoundment. Provided these restoration activities are successful, the Corps will issue credits releases in accordance with the approved MBI and the property will be allowed to sell mitigation credits to offset adverse impacts to waters of the U.S. In addition, the property owner will no longer be required to maintain the embankments, ditches, and water control structures located on the project site.

11.3 **The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private uses to which the area is suited.**
Detrimental effects are expected to be **minimal and temporary**.
Beneficial effects are expected to be **more than minimal and permanent**
The proposed project includes the removal of existing man-made structures (earthen embankments and water control structures) on the project site. The placement of fill material in the existing ditches is expected to help restore natural tidal flows and facilitate salt marsh restoration on the project site. In addition, the removal of the existing embankment will provide public access to shallow salt marsh areas on the project site.

12.0 Determinations

12.1 **Public Hearing Request**
There **were no** requests for a public hearing.
Public hearing decision: Not applicable.

12.2 **Section 176(c) of the Clean Air Act General Conformity Rule Review**
The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Pat 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be predictably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

12.3 **EO 13175 Consultation with Indian Tribes, Alaska Natives and Native Hawaiians.**
This action **will not have** a substantial direct effect on one or more Indian tribes.
As described above, the Catawba Indian Nation submitted written comments in response to the September 2010 Public Notice. The Catawba Indian Nation requested to be notified if Native American artifacts and/or human remains are discovered during the ground disturbance phase of

this project. The NWP 27 verification letter for the proposed mitigation bank includes a special condition requiring the permittee to notify this office immediately if any previously unknown historic or archaeological remains are found on the project site.

12.4 **EO 11988 Floodplain Management**
The evaluations in this document considered alternatives to locating the project in the floodplain, and minimizing and compensating for effects on the floodplain.
The proposed project is located within the Savannah River floodplain. The proposed project includes the removal of an existing earthen embankment that currently restricts tidal flow. The proposed project will increase the size of the existing floodplain.

12.5 **EO 12898 Environmental Justice**
In accordance with Title III of the Civil Rights Act of 1964 and Executive Order 12898, it has been determined that the project would not directly or through contractual or other arrangements, use criteria, methods or practices that discriminate on the basis of race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

12.6 **EO 13112 Invasive Species**
Through special conditions, the permittee will be required to control the introduction and spread of exotic species.
The proposed mitigation work plan includes the removal of freshwater invasive species that are known to occur inside the freshwater impoundment on the project site. Once natural hydrology is restored, the area inside the freshwater impoundment is expected to develop into a fully functional salt marsh. With the exception of two small upland areas, freshwater invasive species will no longer be able to survive on the project site.

12.7 **EO 13212 and 13302 Energy Supply and Availability**
The proposed project will not increase the production, transmission or conservation of energy, or strengthen pipeline safety

12.8 **Finding of No Significant Impact (FONSI)**
Having reviewed the information provided by the bank sponsor and all interested parties and an assessment of the environmental impacts, the undersigned finds that this decision **will not** have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement **will not** be required.

12.9 **Public Interest Determination**
The undersigned finds that the construction and operation of the proposed mitigation bank on the project site **is not** contrary to the public interest.

12.10 **Takings Implication Determination**
Not applicable.

The above determinations were based on our evaluation of the Final MBI. Since the proposed activities in waters of the U.S. associated with the proposed mitigation bank require a Department of the Army Permit, special conditions regarding the construction and operation of

the proposed mitigation bank are being included in the Nationwide Permit 27 verification letter for the proposed project.

PREPARED BY:

Date 4/12/13

Nathaniel I. Ball
Project Manager

REVIEWED BY:

Date 4/12/2013

Travis G. Hughes
Chief, Special Projects Branch

REVIEWED BY:

4/12/2013
Date

Tina B. Hadden
Chief, Regulatory Division

REVIEWED BY:

4/16/2013
Date

for Jonathan M. Jellema
District Counsel

APPROVED BY:

Date 16 APR 2013

Edward P. Chamberlayne, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

IRT CONSENSUS STATEMENT
Clydesdale Mitigation Bank

The undersigned representatives of the South Carolina Interagency Review Team (IRT) by the signature given below, hereby document the following consensus statements. This document is not binding and does not constitute a guarantee, approval, authorization, or promise of any kind. The purpose of this document is for recording and reporting the findings of the IRT preliminary to a final decision regarding a mitigation bank proposal. Final approval and establishment of the proposed mitigation bank shall be accomplished by the issuance of a Department of the Army permit and the execution of a conservation easement, to be signed by the South Coast Mitigation Group LLC, the U.S. Army Corps of Engineers, and the South Carolina Department of Health and Environmental Control.

The IRT has reviewed the document titled "Clydesdale Mitigation Bank, Final Banking Instrument" dated June 2012, and finds it to be an acceptable plan for the establishment, operation, management, and maintenance of the proposed Mitigation Bank. The IRT also finds that if the Clydesdale Mitigation Bank is established and operated in compliance with the above referenced Mitigation Banking Instrument, Department of the Army permit, and conservation easement, the bank will be in accordance with the policies and guidelines for mitigation banking in South Carolina.

Nathaniel I. Ball
U.S. Army Corps of Engineers

Kelly Laycock
U.S. Environmental Protection Agency

Mark Leao
U.S, Fish & Wildlife Service

Jaclyn Daly
National Marine Fisheries Service

Glenn Sandifer
Natural Resources Conservation Service

Jodi Barnes
S.C. Department of Archives & History

Susan Davis
S.C. Department of Natural Resources

Rusty Wenerick
S.C. Department of Health & Environmental Control, Bureau of Water

Christopher Stout
S.C. Department of Health & Environmental Control, Office of Ocean and Coastal Resource Management

Clydesdale Mitigation Bank
Signature Page for the United States Army Corps of Engineers

The United States Army Corps of Engineers hereby agrees to the document titled "Clydesdale Mitigation Bank, Final Banking Instrument", dated June 2012.

IN WITNESS WHEREOF, the U. S. Army Corps of Engineers has caused its duly authorized officer to execute this agreement the date written below.

Signature

16 APR 2013
Date

EDWARD P. CHAMBERLAYNE
Printed Name

IN THE PRESENCE OF:

Travis G. Hughes
Printed Name

IN THE PRESENCE OF:

Nathaniel J. Ball
Printed Name

Exhibit B

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69-A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

Regulatory Division

South Coast Mitigation Group, LLC
Attn: Mr. Murphy McLean
Post Office Box 1541
Lake City, Florida 32056

Dear Mr. McLean:

This letter is in response to a Pre-Construction Notification (PCN) dated June 26, 2012, and additional information which was received on July 23, 2012. By submittal of the PCN, you requested verification that the proposed project is authorized by a Department of the Army Nationwide Permit.

The PCN contains the following identifying information for this project. The work affecting waters of the United States is part of an overall project known as the Clydesdale Mitigation Bank. The project involves impacts to not more than 0.67 acres of waters of the United States, including wetlands. The project site consists of the 694.1-acre mitigation bank site, which is located adjacent to US Highway 17 and the Back River portion of the Savannah River in Jasper County, South Carolina. The PCN also includes the following supplemental information:

a. Drawing sheets 1-5 of 5 titled "Clydesdale Tract, Client: Southeast Mitigation Group, LLC, Location: Jasper County, S.C.," and dated May 24, 2011; Rev: 8/7/12;

Based on a review of the PCN, including the supplemental information indicated above, it has been determined that the proposed activity will result in minimal individual and cumulative adverse environmental effects and is not contrary to the public interest. Furthermore, the activity meets the terms and conditions of Department of the Army Nationwide Permit(s) # 27.

For this authorization to remain valid, the project must comply with the enclosed Nationwide Permit General Conditions, Charleston District Regional Conditions, and the following special conditions:

1. That impacts to aquatic areas do not exceed those specified in the above mentioned PCN, including any supplemental information or revised permit drawings that were submitted to the Corps by the permittee;

2. That the construction, use, and maintenance of the authorized activity is in accordance with the information given in the PCN, including the supplemental information listed above, and is subject to any conditions or restrictions imposed by this letter;

3. That the permittee shall submit the attached signed compliance certification to the Corps within 30 days following completion of the authorized work.

4. That the permittee understands and agrees that cultural resources on the mitigation bank site must be protected in accordance with Section B(12) Historical Sites of the conservation easement that was included in the Final MBI dated June 2012. This conservation easement must be recorded prior to conducting any of the authorized work on the project site.

5. That the permittee agrees to stop work and notify this office immediately if any previously unknown historic or archeological remains are discovered while accomplishing the activity authorized by this permit. The Corps will initiate the Federal, State, and/or Tribal coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

6. That the permittee recognizes that the existing earthen embankment, the water control structures, and the freshwater canal on the northwestern side of the project site are located within an existing Federal easement, and that these features are associated with the existing Federal project.

7. That the permittee recognizes that this permit does not convey any real estate AND THAT PRIOR to conducting any work within the existing Federal easement, the permittee must coordinate with both the Charleston District and the Savannah District to define the Governments interests in the existing features on the project site and to determine whether modifications to these features by the permittee are consistent with the easement and are permissible.

8. That the permittee understands the proposed activities in waters of the U.S. on the project site must comply with the terms and conditions of NWP 27 and this NWP verification letter. In order for the proposed activities to generate mitigation credits, these activities must also comply with the Final Mitigation Banking Instrument dated June 2012, including without limitation all performance standards.

This verification is valid until March 18, 2017, unless the district engineer modifies, suspends, or revokes the nationwide permit authorization in accordance with 33 CFR 330.5(d). If prior to this date, the NWP authorization is reissued without modification or the activity complies with any subsequent modification of the NWP authorization, the verification continues to remain valid until March 18, 2017. If you commence, or are under contract to commence, this activity before the nationwide permit expires, or the nationwide permit is modified, suspended, or revoked by the Chief of Engineers or division engineer in accordance with 33 CFR 330.5(b) or (c), respectively, so that the activity would no longer comply with the terms and conditions of the nationwide permit, you will have 12 months after the date the nationwide permit expires or is modified, suspended, or revoked, to complete the activity under the present terms and conditions of this nationwide permit.

This Nationwide permit is being verified based on the information you have provided. It is your responsibility to read the attached Nationwide Permits(s) along with the General, Regional, and Special Conditions before you begin work. If you determine that your project will not be able to meet the Nationwide Permit and the conditions, you must contact the Corps before you proceed.

Your cooperation in the protection and preservation of our navigable waters and natural resources is appreciated. In all future correspondence concerning this matter, please refer to

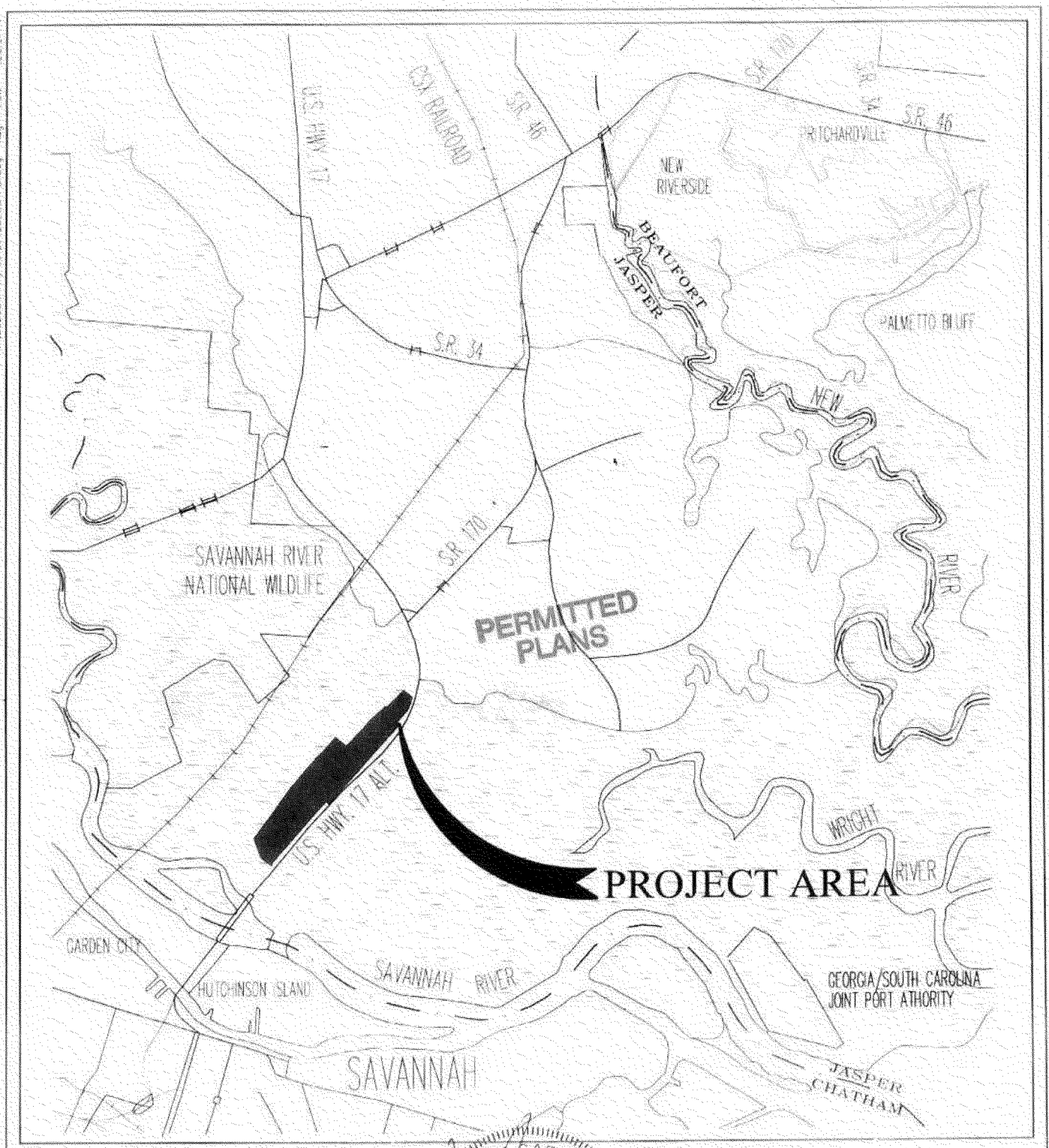
our file number SAC 2009-00756. A copy of this letter is being forwarded to certain State and/or Federal agencies for their information. If you have any questions concerning this matter, please contact Mr. Nat Ball at 843-329-8044, or toll free at 1-866-329-8187.

Sincerely,

Edward P. Chamberlayne, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

Enclosures:
Permit Drawings
Nationwide Permit #27
Nationwide Permit General Conditions
Charleston District Regional Conditions
Compliance Certification Form

Electronic Copy Furnished to:
Interagency Review Team



CLYDESDALE TRACT

PROPOSED ACTIVITY:

VICINITY MAP

CLIENT:

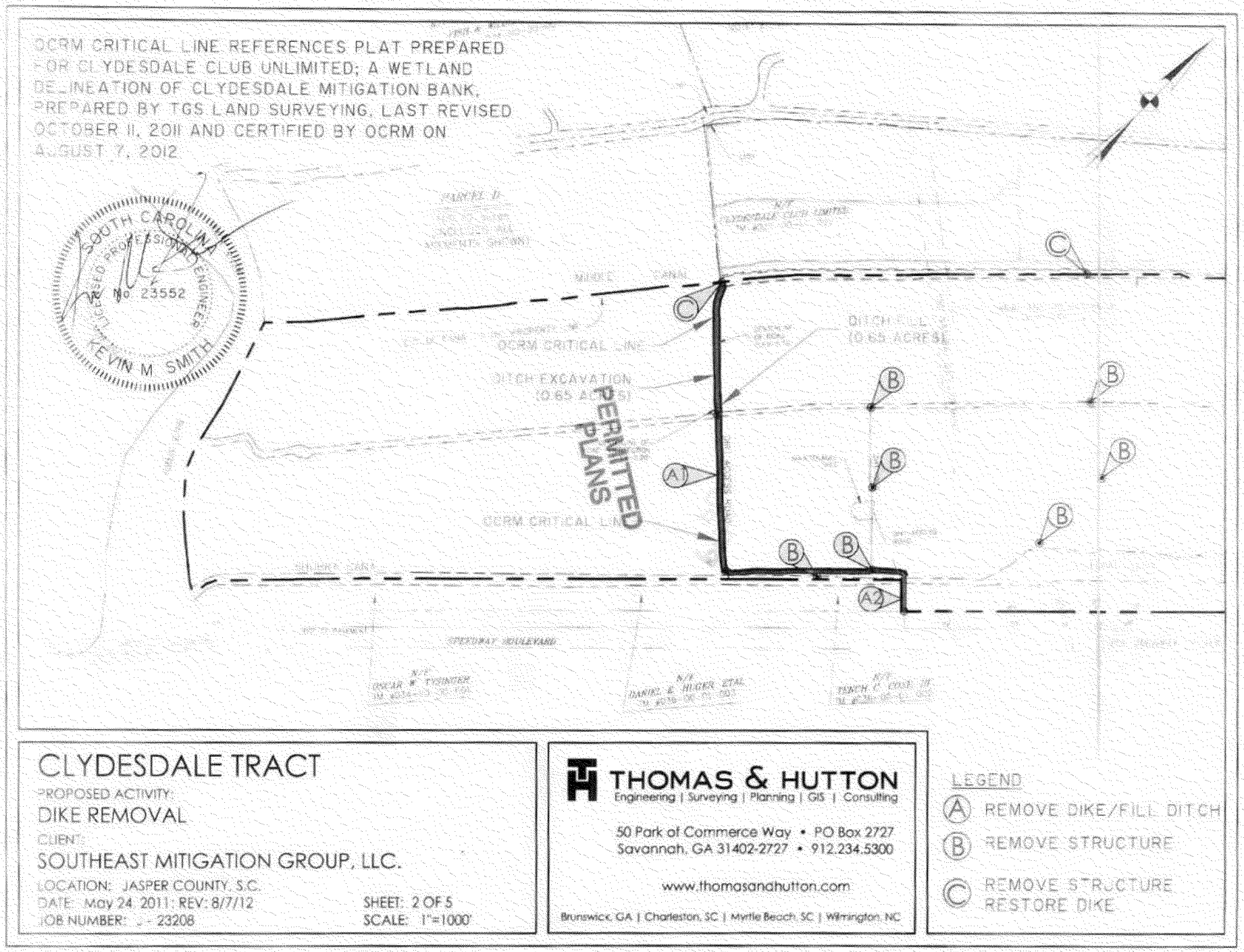
SOUTHEAST MITIGATION GROUP, LLC

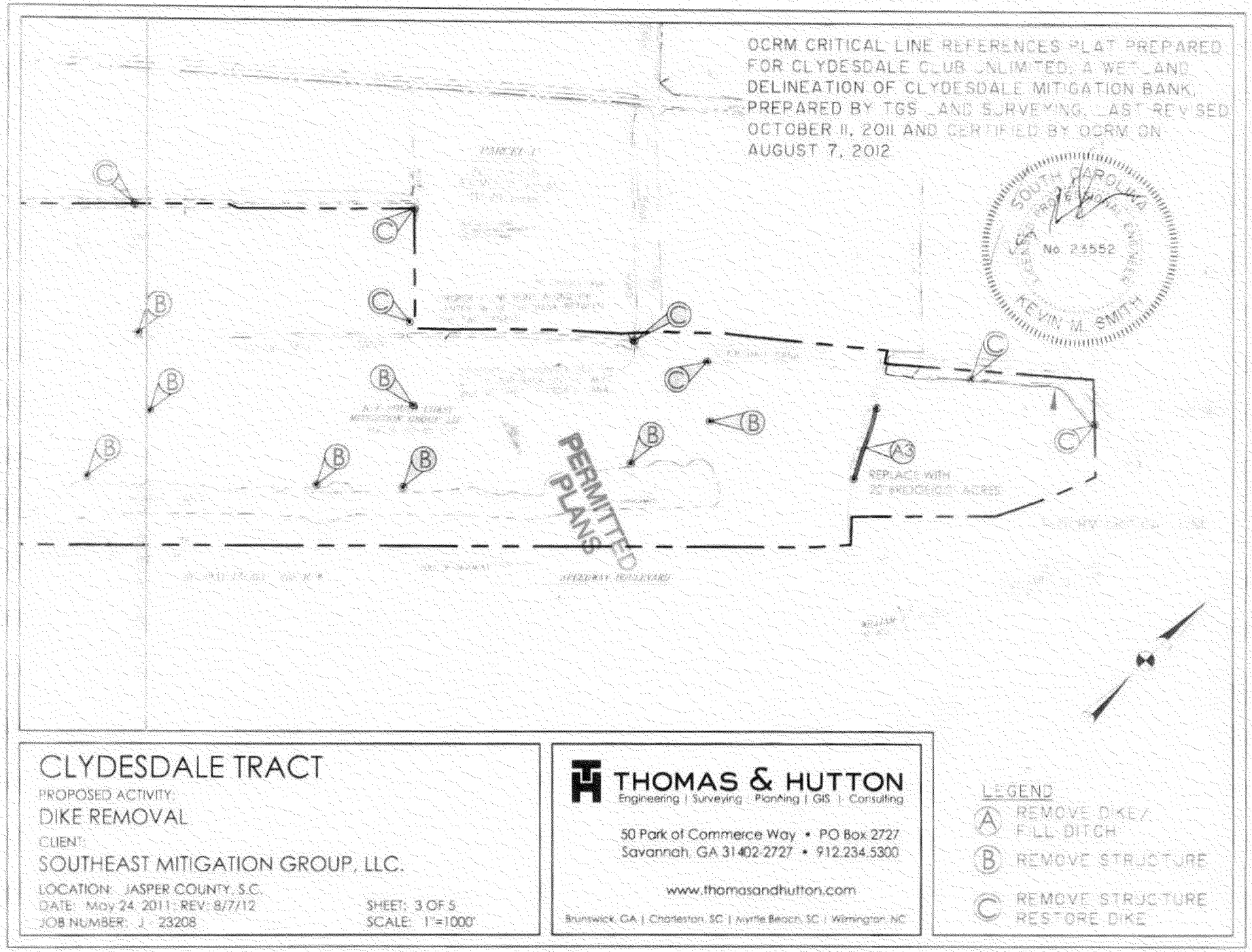
LOCATION: JASPER COUNTY, S.C.
DATE: May 24, 2011 ; Rev. 8/7/12
JOB NUMBER: J - 23208

SHEET: 1 OF 1
SCALE: N.T.S.

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 23552
KEVIN M. SMITH

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way • PO Box 2727
Savannah, GA 31402-2727 • 912.234.5300
www.thomasandhutton.com
Brunswick, GA | Charleston, SC | Myrtle Beach, SC | Wilmington, NC


OCRM CRITICAL LINE REFERENCES PLAT PREPARED FOR CLYDESDALE CLUB UNLIMITED; A WETLAND DELINEATION OF CLYDESDALE MITIGATION BANK, PREPARED BY TGS LAND SURVEYING, LAST REVISED OCTOBER 11, 2011 AND CERTIFIED BY OCRM ON AUGUST 7, 2012
SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 23552
KEVIN M. SMITH
OCRM CRITICAL LINE
DITCH EXCAVATION
(0.65 ACRES)
PERMITTED PLANS
A1
A2
B
C
SPEEDWAY BOULEVARD
CLYDESDALE TRACT
PROPOSED ACTIVITY:
DIKE REMOVAL
CLIENT:
SOUTHEAST MITIGATION GROUP, LLC.
LOCATION: JASPER COUNTY, S.C.
DATE: May 24, 2011; REV: 8/7/12
JOB NUMBER: J - 23208
SHEET: 2 OF 5
SCALE: 1"=1000'
THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way • PO Box 2727
Savannah, GA 31402-2727 • 912.234.5300
www.thomasandhutton.com
Brunswick, GA | Charleston, SC | Myrtle Beach, SC | Wilmington, NC
LEGEND
A REMOVE DIKE/FILL DITCH
B REMOVE STRUCTURE
C REMOVE STRUCTURE RESTORE DIKE



CLYDESDALE TRACT

PROPOSED ACTIVITY:
DIKE REMOVAL

CLIENT:
SOUTHEAST MITIGATION GROUP, LLC.

LOCATION: JASPER COUNTY, S.C.
DATE: May 24, 2011 REV: 8/7/12
JOB NUMBER: J - 23208

SHEET: 3 OF 5
SCALE: 1"=1000'

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting

50 Park of Commerce Way • PO Box 2727
Savannah, GA 31402-2727 • 912.234.5300

www.thomasandhutton.com

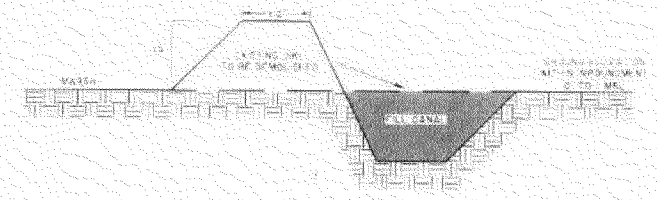
Brunswick, GA | Charleston, SC | Myrtle Beach, SC | Wilmington, NC

LEGEND

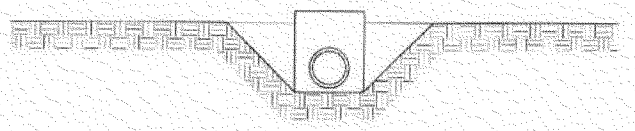
A REMOVE DIKE / FILL DITCH

B REMOVE STRUCTURE

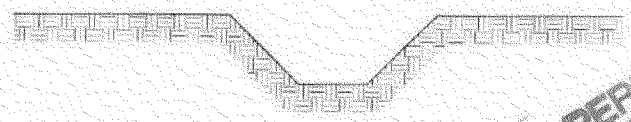
C REMOVE STRUCTURE RESTORE DIKE



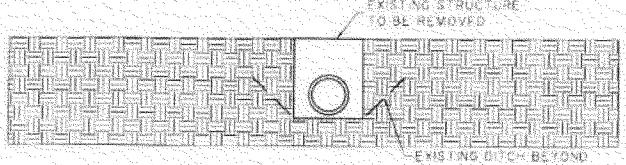
A DIKE REMOVAL
TYPICAL SECTION (N.T.S.)



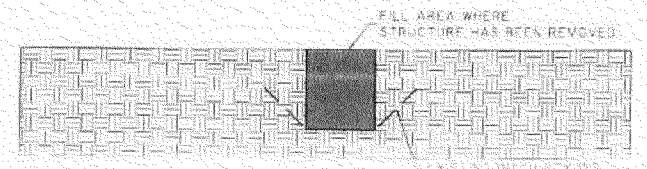
B STRUCTURE REMOVAL
TYPICAL SECTION (BEFORE) (N.T.S.)



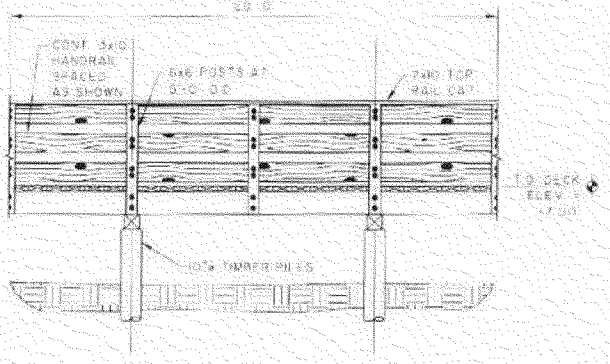
B STRUCTURE REMOVAL
TYPICAL SECTION (AFTER) (N.T.S.)



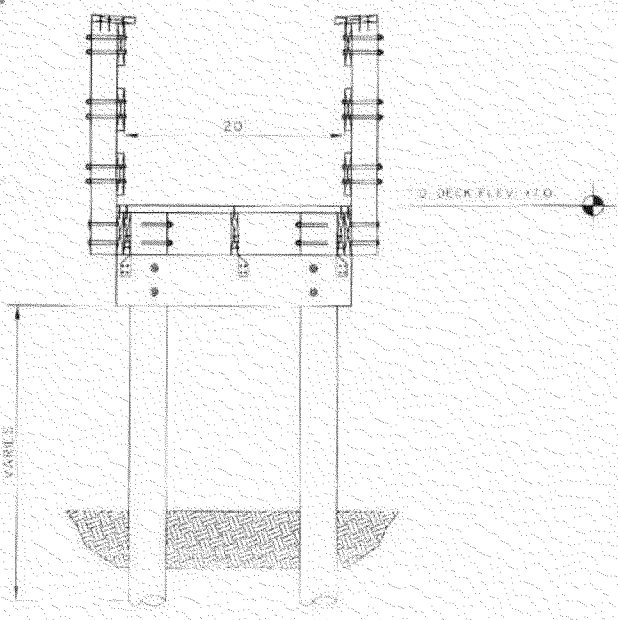
C STRUCTURE REMOVAL / DIKE PLUG INSTALLATION
TYPICAL SECTION (BEFORE) (N.T.S.)



C STRUCTURE REMOVAL / DIKE PLUG INSTALLATION
TYPICAL SECTION (AFTER) (N.T.S.)



TIMBER BRIDGE ELEVATION
NOT TO SCALE



PERMITTED PLANS

CLYDESDALE TRACT

PROPOSED ACTIVITY:
DETAIL SHEET

CLIENT:
SOUTHEAST MITIGATION GROUP, LLC

LOCATION: JASPER COUNTY, S.C.
DATE: May 24, 2011; REV: 8/7/12
JOB NUMBER: J - 23208

SHEET: 4 OF 5
SCALE: N.T.S.

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 23552
KEVIN M. SMITH

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way • PO Box 2727
Savannah, GA 31402-2727 • 912.234.5300
www.thomasandhutton.com
Brunswick, GA | Charleston, SC | Myrtle Beach, SC | Wilmington, NC

IMPACT TABLE

(A)

TYPICAL	AREA (SY)/(AC)	CUBIC YARDS
EXCAVATION	±3,095/0.65	±5,159
FILL	±3,095/0.65	±5,159

(B)

TYPICAL	AREA (SY)/(AC)	CUBIC YARDS
EXCAVATION	±25/0.005	±33
FILL	0/0	0
TOTAL (12)		
EXCAVATION	±275/0.062	±363
FILL	0/0	0

PERMITTED PLANS

(C)

TYPICAL	AREA (SY)/(AC)	CUBIC YARDS
EXCAVATION	0/0	0
FILL	±75/0.001	±85
TOTAL (8)		
EXCAVATION	0/0	0
FILL	±56/0.012	±68

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 23552
KEVIN M. SMITH

CLYDESDALE TRACT

PROPOSED ACTIVITY:
IMPACT TABLE

CLIENT:
SOUTHEAST MITIGATION GROUP, LLC

LOCATION: JASPER COUNTY, S.C.
DATE: May 24, 2011; REV 8/7/12
JOB NUMBER: J - 23208
SHEET: 5 OF 5
SCALE: N.T.S.

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way • PO Box 2727
Savannah, GA 31402-2727 • 912.234.5300
www.thomasandhutton.com
Brunswick, GA | Charleston, SC | Myrtle Beach, SC | Wilmington, NC

2012 Nationwide Permit

Please read this Nationwide Permit along with the General, Regional, and Special conditions that may be associated with this permit. It is your responsibility to insure your project meets this nationwide permit and the conditions at all times. If changes are needed or if you cannot meet these requirements, please notify the Corps before proceeding with the work.

27. *Aquatic Habitat Restoration, Establishment, and Enhancement Activities*

Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of nontidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.

To the extent that a Corps permit is required, activities authorized by this NWP include, but are not limited to: The removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to establish or re-establish wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; reestablishment of submerged aquatic vegetation in areas where those plant communities previously existed; reestablishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

This NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services. Except for the relocation of non-tidal waters on the project site, this NWP does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa) or uplands. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type. This NWP does not authorize stream channelization. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments.

Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services.

Reversion. For enhancement, restoration, and establishment activities conducted: (1) In accordance with the terms and conditions of a binding stream or wetland enhancement or restoration agreement, or a wetland establishment agreement, between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperating agencies; (2) as voluntary wetland restoration, enhancement, and establishment actions documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) on reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the applicable state agency, this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration,

enhancement, or establishment activities). The reversion must occur within five years after expiration of a limited term wetland restoration or establishment agreement or permit, and is authorized in these circumstances even if the discharge occurs after this NWP expires. The five-year reversion limit does not apply to agreements without time limits reached between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS, or an appropriate state cooperating agency. This NWP also authorizes discharges of dredged or fill material in waters of the United States for the reversion of wetlands that were restored, enhanced, or established on prior-converted cropland or on uplands, in accordance with a binding agreement between the landowner and NRCS, FSA, FWS, or their designated state cooperating agencies (even though the restoration, enhancement, or establishment activity did not require a section 404 permit). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before conducting any reversion activity the permittee or the appropriate Federal or state agency must notify the district engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps Regulatory requirements are applicable to that type of land at the time. The requirement that the activity results in a net increase in aquatic resource functions and services does not apply to reversion activities meeting the above conditions. Except for the activities described above, this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion.

Reporting. For those activities that do not require pre-construction notification, the permittee must submit to the district engineer a copy of: (1) The binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement, or a project description, including project plans and location map; (2) the NRCS or USDA Technical Service Provider documentation for the voluntary stream enhancement or restoration action or wetland restoration, enhancement, or establishment action; or (3) the SMCRA permit issued by OSMRE or the applicable state agency. The report must also include information on baseline ecological conditions on the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. These documents must be submitted to the district engineer at least 30 days prior to commencing activities in waters of the United States authorized by this NWP.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing any activity (see general condition 31), except for the following activities: (1) Activities conducted on non- Federal public lands and private lands, in accordance with the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the U.S. FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies; (2) Voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) The reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency. However, the permittee must submit a copy of the appropriate documentation to the district engineer to fulfill the reporting requirement.
(Sections 10 and 404)

Note: *This NWP can be used to authorize compensatory mitigation projects, including mitigation banks and in-lieu fee projects. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition, since compensatory mitigation is generally intended to be permanent.*

C. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation

with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less

that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer

may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide

permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section

7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

2012 APPROVED
NATIONWIDE PERMIT REGIONAL CONDITIONS
FOR SOUTH CAROLINA

The following Regional Conditions have been proposed by the Charleston District for the nationwide permits (NWP) published in the February 21, 2012, Federal Register as authorized under General Condition # 26. Regional conditions are authorized to modify NWP's by adding conditions on a generic basis applicable to certain activities or specific geographic areas. Certain terminologies used in the following conditions are identified in *italics* and are defined in the above referenced Federal Register under Definitions.

For All Nationwide Permits:

1. The applicant must implement *best management practices* during and after all construction to minimize erosion and migration of sediments off site. These practices may include use of devices capable of preventing erosion and migration of sediments in waters of the U.S., including wetlands. These devices must be maintained in a functioning capacity until the area is permanently stabilized. All disturbed land surfaces must be stabilized upon project completion.

2. All wetland and stream crossings must be stabilized immediately following completion of construction/installation and must be aligned and designed to minimize the *loss of waters of the U.S.*

3. Necessary measures must be taken to prevent oil, tar, trash, debris and other pollutants from entering the adjacent waters or wetlands.

4. Any excess excavated materials not utilized as authorized back fill must be placed and contained on high land and permanently stabilized to prevent erosion into waters of the U.S., including wetlands.

5. Placement and/or stockpiling (double handling) of excavated material in waters of the U.S, including wetlands, is prohibited unless specifically authorized by the nationwide permit verification. Should double handling be authorized, the material must be placed in a manner that does not impede circulation of water and will not be dispersed by currents or other erosive forces.

6. Once project construction is initiated, it must be carried to completion in an expeditious manner in order to minimize the period of disturbance to aquatic resources and the surrounding environment.

7. The permittee must notify the Corps of Engineers, Charleston District in the event archaeological or paleontological remains are found during the course of work. Archaeological remains consist of any materials made or altered by man, which remain from past historic or prehistoric times (i.e., older than 50 years). Examples include old pottery fragments, metal, wood, arrowheads, stone implements or tools, human burials, historic docks, structures, or non-recent (i.e., older than 100 years) vessel ruins.

Paleontological remains consist of old animal remains, original or fossilized, such as teeth, tusks, bone, or entire skeletons.

8. Use of nationwide permits does not obviate requirements to obtain other Federal, State, county, or local government authorizations.

9. With the exception of NWP 38, no NWP is authorized in areas of known or suspected sediment contamination.

FOR SPECIFIC NATIONWIDE PERMITS:

10. For **NWP's 12, 14, 18, 27, 29, 38, 39, 40, 42, 43, 44, 51 and 52,** a discharge cannot cause the loss of greater than 300 linear feet of *streambed.*

11. For **NWP's 1, 3, 5, 7, 8, 10, 11, 12, 13, 14, 15, 36, 51, and 52**, a notification must be submitted for any activity that would be located adjacent to an authorized Federal Navigation project. These Federal navigation areas include Adams Creek, Atlantic Intracoastal Waterway (AIWW), Ashley River, Brookgreen Garden Canal, Calabash Creek Charleston Harbor (including the Cooper River and Town Creek), Folly River, Georgetown Harbor (Winyah Bay, Sampit River, and Bypass Canal), Jeremy Creek, Little River Inlet, Murrells Inlet (Main Creek), Port Royal Harbor, Savannah River, Shem Creek (including Hog Island Channel & Mount Pleasant Channel), Shipyard Creek, Village Creek and the Wando River.

12. For **NWP 3, paragraph (a) and (c) activities**, the prospective permittee must notify the District Engineer in accordance with General Condition 31, if the proposed discharge of dredged or fill material will cause the loss of greater than 1/10-acre of waters of the U.S. or if the proposed discharge will be located within a special aquatic site, including wetlands and riffle pool complexes.

13. For **NWP 3, paragraph (b) activities,** excavation of accumulated sediment or other material is not authorized in areas adjacent to existing private or commercial dock facilities, piers, canals dug for boating access, marinas, or boat slips.

14. For **NWP's 7 and 12**, the associated intake structure must be screened to prevent entrainment of juvenile and larval organisms and the inflow velocity of the associated intake structures must be limited to $\leq$ 0.5 ft/sec.

15. Activities authorized by **NWP 7** must occur in the immediate vicinity of the outfall, and must be necessary for the overall construction or operation of the outfall (e.g. pump equipment, rip-rap). NWP 7 shall not be used to authorize ancillary activities such as construction of access roads, installation of utility lines leading to or from the outfall or intake structures, construction of buildings, distant activities, etc.

2012 APPROVED
NATIONWIDE PERMIT REGIONAL CONDITIONS
FOR SOUTH CAROLINA

16. **NWP's 12, 14, 29, 39, 43, 51 and 52** will not be used in conjunction with one another for an activity that is considered a *single and complete project*.

17. For **NWPs 12, 14,** and **18,** the prospective permittee must submit a pre-construction notification (PCN) to the District Engineer in accordance with General Condition 31, prior to commencing the activity if the proposed discharge will impact more than **25 linear feet of streambed.** This notification requirement is in addition to the notification criteria listed for these NWPs.

18. For **NWP 12**, excavated material shall be returned to the trench and any remaining material shall be relocated and retained on an upland disposal site. Substrate containing roots, rhizomes, seeds, etc., must be kept viable and replaced at the surface of the excavated site. Impacted wetlands will be replanted with native wetland species or allowed to naturally re-vegetate from the replaced substrate, as long as the resulting vegetation is native.

19. For **NWP 12**, stream banks that are cleared of vegetation will be stabilized using bioengineering techniques and/ or the planting of deep-rooted native species.

20. For **NWP 12**, construction techniques to prevent draining, such as anti-seep collars, will be required for utility lines buried in waters of the U.S. when necessary. If no construction techniques to prevent draining are proposed, the applicant must provide appropriate documentation that such techniques are not required to prevent drainage of waters of the U.S.

21. For **NWP 12,** the prospective permittee must submit a pre-construction notification (PCN) to the District Engineer in accordance with General Condition 31, prior to commencing the activity if the activity will involve temporary structures, fills, and/or work. To be complete, the PCN must also include the specifications of how pre-construction contours will be re-established and verified after construction. This notification requirement is in addition to the notification criteria listed for this NWP.

22. For **NWP 12,** the prospective permittee must submit a pre-construction notification (PCN) to the District Engineer in accordance with General Condition 31, prior to commencing the activity if the activity will involve maintained utility crossings. To be complete, the PCN must also include a justification for the required width of the maintained crossing that impacts waters of the U.S. This notification requirement is in addition to the notification criteria listed for this NWP.

23. For **NWP 12**, the prospective permittee must submit a pre-construction notification (PCN) to the District Engineer in accordance with General Condition 31, prior to commencing the activity if the activity will involve the construction of a sub-station in waters of the U.S. To be complete, the PCN must also include a statement of avoidance and minimization for the

loss of waters of the U.S. impacted by the utility line sub-station. This notification requirement is in addition to the notification criteria listed for this NWP.

24. For **NWP 12,** the prospective permittee must submit a pre-construction notification (PCN) to the District Engineer in accordance with General Condition 31, prior to commencing the activity if the activity will involve the permanent conversion of forested wetlands to herbaceous wetlands. To be complete, the PCN must also include the acreage of conversion impacts of waters of the U.S. and a compensatory mitigation proposal or a statement of why compensatory mitigation should not be required. This notification requirement is in addition to the notification criteria listed for this NWP.

25. For **NWP's, 14, 29, 39, 46, 51 and 52,** all notifications must include appropriately sized and positioned culverts that meet the requirements of General Conditions 2, 9 and 10 for each individual crossing of waters of the U.S.

26. For **NWP's 14, 29, 39, 51 and 52,** each individual stream crossing is required to accommodate bankfull* flows by maintaining the existing bankfull channel cross sectional area. Flows that exceed bankfull flow must be accommodated by placement of additional culverts above the bankfull elevation.

27. Notifications for aquatic habitat *restoration,* establishment, and enhancement activities authorized by **NWP 27** will require coordination with appropriate Federal, State, and local agencies. The coordination activity will be conducted by the Corps of Engineers. Agencies will generally be granted 15 days to review and provide comments unless the District Engineer determines that an extension of the coordination period is reasonable and prudent.

28. For **NWP 29**, the loss of waters of the U.S. is limited to a maximum of ¼-acre for a single family residence.

29. For **NWP 36**, the width of the boat ramp will be limited to **16 feet** and only one boat ramp may be constructed on a single lot or tract of land (e.g. each lot within a subdivision). NWP 36 may be used to authorize the construction of all boat ramps.

30. For **NWP 38**, notifications require the following information:
    - documentation that the specific activities are required to effect the containment, stabilization, or removal of hazardous or toxic waste materials as performed, ordered, or sponsored by a government agency with established legal or regulatory authority;
    - a narrative description indicating the size and location of the areas to be restored, the work involved and a description of the anticipated results from the restoration;
    - a plan for the monitoring, operation, or maintenance of the restored area.

31. For **NWP's 29 and 39**, the discharges of dredged or fill material for the construction of *stormwater management facilities* in *perennial streams* are not authorized.

2012 APPROVED
NATIONWIDE PERMIT REGIONAL CONDITIONS
FOR SOUTH CAROLINA

32. For **NWP 41**, notification must be submitted for projects that require mechanized land clearing in waters of the U.S., including wetlands, in order to access or perform reshaping activities.

33. **NWP 41** is prohibited in channelized streams or stream relocation projects that exhibit natural stream characteristics and/or perform natural stream functions.

34. For **NWP 48**, a copy of the lease or permit issued by an appropriate state or local government agency, a treaty, or a legal contractual document establishing a valid property interest, must be provided with the pre-construction notification (PCN) for commercial shellfish aquaculture activities that occur in a new project area. This is in addition to the information specifically required for this NWP as well as the required information found in General Condition 31.

*Bankfull corresponds to the discharge at which channel-forming processes, such as forming or removing bars or meanders, is most effective. It is typically associated with the 1.5-year storm event, the "ordinary high water mark", and the elevation on the stream bank where flooding begins in a stable stream system. It can often be identified in the field by the elevation of the highest depositional feature (e.g. point bars), a recognizable floodplain, or a break in perennial vegetation.

Permit Number: _____

Name of Permittee: _____

Date of Issuance: _____

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
Regulatory Division
69A Hagood Avenue
Charleston, South Carolina 29403-5107

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

==========

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____
Signature of Permittee

CESAC-RD- P
Application: SAC 2009-00756

MEMORANDUM FOR RECORD
SUBJECT: Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification

Applicant: South Coast Mitigation Group, LLC
Attn: Mr. Murphy McLean
Post Office Box 1541
Lake City, Florida 32056

Reviewer: Nathaniel I. Ball

On-Site review: ☒Yes ☐No **Off –Site Review:** ☒Yes ☐No

Project Location ***(Waterway, Section, Township, Range, City, County, State):***

Pre-Construction Notification Receipt Date: June 26, 2012 **Complete?** No

Additional Information Requested Date: July 3, 2012

Pre-Construction Notification Complete Date: July 23, 2012

Waters of the US: The aquatic resources on the project site include open waters and vegetated salt marsh that are subject to the ebb and flow of the tide (Traditional Navigable Waters), and open waters and freshwater wetlands that are separated from the adjacent tidal waters by a manmade earthen embankment. All of these aquatic resources are considered adjacent to the Back River portion of the Savannah River and are jurisdictional.

Authority: ☒Section 10 ☒Section 404 ☐Section 103

Project Description ***(Describe activities in waters of the U.S. considered for verification):*** The proposed project consists of the excavation and placement of fill material in waters of the United States associated with the restoration of natural hydrology and salt marsh vegetation on the project site. Specifically, the permittee will excavate an embankment (0.65 acres) and place the excavated material in the adjacent ditch (0.65 acres) to restore natural elevations.

From the Corps' perspective, the construction of the original embankment and the installation and operation of the water control structures has altered the natural hydrology on the project site. Likewise, the vegetation on the project site has been altered by management activities (*e.g.*, routine mowing, planting, flooding, etc) for recreational purposes. The proposed mitigation activities will allow natural tidal flows (hydrology) to enter the project site and will allow natural vegetation to become established on the project site.

CESAC-RD- P
SUBJECT: Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification for the Above-Numbered Permit Application

It is noted that the restoration activities authorized by NWP 27 will support the establishment of the proposed mitigation bank. The decision on the mitigation bank itself is documented in a separate Memorandum for Record (Clydesdale Mitigation Bank) since the verification of this NWP is not dependent on the Mitigation Bank; however, it is recognized that the establishment of the mitigation bank is dependent on the verification that the proposed work meets the terms and conditions of NWP 27. Although there was substantial debate between the members of the IRT regarding the value of managed freshwater impoundments and fully functional salt marsh, the Corps must distinguish between these two separate actions because although the evaluation of the proposed mitigation bank is related, it is not relevant as to whether the proposed work in waters of the U.S. meets the terms and conditions of NWP 27, as the permittee could perform these restoration activities *without* establishing a Mitigation Bank. However, since the comments received in response to the Public Notice for the mitigation bank and the PCN for the NWP were similar, there is some redundancy in our decision to address of the comments in two independent memoranda.

It is the Corps' view that the proposed activities will restore natural hydrology and vegetation on the project site. The permittee also plans to remove 12 existing water control structures (0.06 acres) to improve tidal flows within the project site, and plans to remove 8 existing water control structures and to replace them with earthen plugs (0.01 acres) to prevent tidal flows from entering an existing freshwater canal or the adjacent managed freshwater impoundment.

Site Assessment (*Describe the present land use, cover type, and a qualitative assessment of the aquatic resources):* The majority of the project site is a managed freshwater impoundment. This area consists of embankments, open water, forested wetlands, scrub-shrub wetlands, plowed fields, and a shallow freshwater impoundment. The remainder of the project site is subject to the ebb and flow of the Savannah River and is a tidal salt marsh. Additional information about the existing condition of aquatic resources on the project site is included in the Final MBI, dated June 2012.

Type of Permit Requested: NWP 27

Pre-construction Notification Required: ☒Yes ☐No

Coordination with Agencies/Tribes Needed: ☒Yes ☐No Date: In accordance with the Charleston District's Regional Conditions for the 2012 Nationwide Permits, the Corps forwarded the other regulatory and resources agencies a copy of the bank sponsor's Pre-Construction Notification (PCN) on July 23, 2012, for a 15-day comment period. Coordination with the Catawba Indian Nation is normally not required to evaluate a PCN for activities in waters of the U.S. authorized by a NWP. However, the Catawba Indian Nation submitted written comments in response to the Public Notice for the proposed mitigation bank. Their comments are addressed in a special condition of the mitigation bank authorization letter.

Commenting Agencies:

Coordination Needed/Required: ☒Yes ☐No

(If yes, check appropriate agency(s))

US Fish and Wildlife Service ☐
US Environmental Protection Agency ☐
National Marine Fisheries Service ☐

CESAC-RD- P
SUBJECT: Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification for the Above-Numbered Permit Application

State Agency (list commenting state agencies) ☒ SC Department of Natural Resources (SCDNR)
State Historic Preservation Office ☐
Other: ☒ Southern Environmental Law Center (SELC)

SCDNR provided written comments on August 7, 2012, in response to the PCN for the proposed activities in waters of the U.S. In addition, the Southern Environmental Law Center (SELC) submitted an email to the Corps regarding the proposed project on March 2, 2013. SELC attached copies of a 2008 letter from USFWS to Savannah District regarding the existing freshwater canal and a letter from SELC to SCDHEC regarding the PCN for the proposed project. According to the email, SELC does not believe that a NWP should be used to authorize the proposed activities in waters of the U.S.

Substantive Issues Raised and Corps Resolution *(Consideration of Comments)*: The Corps and the other members of the IRT have been working on the proposed Clydesdale Mitigation Bank for more than three years. The IRT was provided copies of a draft Prospectus (June 2009), a complete Prospectus (September 2009), a Baseline Monitoring and Functional Assessment Report (April 2010), draft Mitigation Banking Instruments (November 2010 and March 2011), and final Mitigation Banking Instruments (October 2011 and March 2012, and June 2012). The Corps and the other members of the IRT have reviewed and submitted numerous comment letters regarding these documents and the proposed mitigation bank to the bank sponsor.

The majority of the written comments that were submitted by SCDNR in response to the PCN are related to the proposed mitigation bank rather than the proposed activities in waters of the U.S. The Corps has attempted to distinguish between these two issues because the Corps' evaluation of the proposed mitigation bank is related, but distinct from whether the proposed work in waters of the U.S. meets the terms and conditions of NWP 27.

Since SCDNR references previous comments that were submitted regarding the proposed mitigation bank, the Corps' summary of issues regarding the PCN also includes some information that was submitted during our review of the proposed mitigation bank. The following issues are considered relevant to our evaluation of the PCN.

Ecological suitability of the site- According to SCDNR, the elevation of the managed freshwater impoundment on the project site appears to be lower than the elevation of the existing salt marsh that is located outside the earthen embankment. SCDNR stated that it will be difficult to establish tidal marsh vegetation on a large portion of the project site.

Although the Corps considered SCDNR's concerns about the ability of the project site to support and/or develop salt marsh vegetation, the Corps recognizes that the fully functional salt marsh on the project site was previously located within a former rice field/managed freshwater impoundment. Therefore, the Corps considers the location and the landscape position of the project site as conducive to the restoration, development and the long-term sustainability of a healthy salt marsh.

According to historical maps, the existing salt marsh on the project site used to be located inside a freshwater impoundment. The earthen embankment adjacent to the Back River was allowed to

deteriorate and this area has developed into a fully functional salt marsh. The applicant has proposed to remove the existing embankment and to fill a portion of the existing ditches to restore natural elevations. In addition, the applicant has proposed to plant appropriate salt marsh vegetation if the natural seed source is not sufficient to revegetate the project site. The Corps believes the proposed activities will facilitate the development of additional salt marsh on the project site.

Need for Restoration- According to SCDNR, the project site does not need to be restored. The Corps recognizes that SCDNR would prefer for the project site to be managed as a freshwater impoundment. However, the project site is privately owned and the applicant may propose to restore natural hydrology and vegetation or to develop a commercial mitigation bank on the project site.

Definition of Restoration / Conversion of Aquatic Resource Type- SCDNR objected to the use of the word restoration to describe the proposed project. SCDNR believes the proposed project will result in the conversion of freshwater aquatic resources into salt marsh. SCDNR's views are inconsistent with Corps policy. In accordance with the preamble of the 2012 Nationwide Permits, District Engineers have the discretion to determine what constitutes a "natural wetland" for the purposes of NWP 27. The preamble also states that changes in wetland plant communities that are caused by restoring wetland hydrology are to be considered wetland rehabilitation activities that are authorized by NWP 27 and are not to be considered conversion to another aquatic habitat type. *See* 77 Fed.Reg.10184, at 10215. NWP 27 states that, "Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type." 77 Fed. Reg. 10184, at 10275.

The proposed project consists of the removing man-made features (an earthen embankment and water control structures) to restore natural hydrology on the project site. Areas on the project site that are subject to natural tidal flows are currently dominated by tidal salt marsh. Once the existing man-made features are removed, the area inside the freshwater impoundment on the project site will also be dominated by tidal salt marsh. The Corps believes the natural condition of this portion of the Savannah River floodplain is tidal salt marsh. Therefore, the proposed project is considered restoration and may be authorized using NWP 27.

Avoidance and Minimization on Impacts- SCDNR objected to the volume of fill material that will be discharged into waters of the U.S. as part of the proposed project and stated that an individual permit should be required for the proposed project. The proposed project consists of excavating an earthen embankment and placing the material into the adjacent ditches to restore natural elevations. The Corps encouraged the permittee to remove the existing embankment rather than opening the water control structures or constructing breaches in the embankment that may still restrict water flows. Likewise, the placement of excavated material into the adjacent ditches will not result in a loss of waters of the U.S. The permittee has proposed to restore natural elevations by eliminating a man-made feature (open water ditches) and increasing the acreage of salt marsh vegetation on the project site. The placement of fill material in the existing ditches is necessary to restore the natural elevations on the project site. NWP 27 does not include a threshold for the volume of fill material or the acreage of impact, because the Corps considers the restoration of aquatic resources to be a beneficial activity.

Aquatic Life Movement- SCDNR questioned whether the proposed project will improve aquatic life movement. The Corps believes the existing earthen embankments and water control structures on the project site currently impact aquatic life movement. The proposed project is expected to remove these obstructions to aquatic life movement and will restore natural tidal flows on the project site. Therefore, the proposed project complies with General Condition 2 of the 2012 NWPs.

Impacts to the American alligator- The Corps recognizes that freshwater species such as the American alligator may be displaced by the proposed project. We anticipate that any alligators on the project site will search for suitable habitat (another freshwater impoundment) upstream.

Spawning Areas- SCDNR questioned whether the project site functioned as a spawning area for marine species in the past. The proposed project is not expected to impact any existing freshwater or marine spawning areas. Therefore, the proposed project complies with General Condition 3 of the 2012 NWPs.

Migratory Bird Breeding Areas- SCDNR stated the proposed project will result in significant adverse impacts to important migratory bird breeding areas. SCDNR provided several examples of birds that nest in intertidal freshwater marshes. In addition, SCDNR stated that the project site may serve as breeding habitat for two species, black rail (Laterallus jamaicensis) and Macgillivray's seaside sparrow (Amodrammus mariamus macgillivraii), two species that may be evaluated for protection under the Endangered Species Act in the future. The project site is also used by migratory species during the winter and spring migration.

As described above, the project site is managed for recreation. Individual fields are drained, flooded, mowed, or planted to meet the property owner's needs. The Corps recognizes that the project site may be used as breeding habitat for some migratory bird species. However, any breeding habitat on the project site is currently subject to routine disturbance. Since one of the primary goals of the proposed project is to restore natural hydrology and vegetation, impacts to existing habitat within the managed freshwater impoundment on the project site are considered unavoidable. Therefore, the proposed project complies with General Condition 4 of the 2012 NWPs.

Endangered Species- According to SCDNR, there is an existing wood stork (Mycteria americana) rookery approximately 1.4 miles from the project site. SCDNR stated that wood stork foraging is well documented at SNWR and they probably use the mitigation bank site for foraging, too. SCDNR Questioned whether the Corps has made or can make a determination that no threatened or endangered species will be adversely impacted by the proposed project. In addition, they questioned whether formal consultation is required for the proposed project.

The Corps is required to make a determination regarding potential impacts to Federally-listed threatened or endangered species, species that are proposed for listing, and designated or proposed critical habitat. As described above, the available habitat on the project site consists of existing tidal marsh and a freshwater impoundment that is managed by the property owner for recreation and is subject to routine disturbance. Manatees and sturgeon may enter the existing open water channels and wood storks may forage in the shallow freshwater and salt marsh areas on the project site.

Once the aquatic resources on the project site are restored, there will be additional open water channels on the project site, and wood storks will continue to be able to forage within the shallow salt marsh areas on the project site. The project site is not critical habitat for any federally-listed species. From the Corps' perspective, there are a number of similar areas upstream and downstream of the project site and within adjacent watersheds that also provide potential foraging habitat. The Corps determined that the proposed project will have "no effect" on threatened or endangered species. Therefore, no additional consultation (formal or informal) is required with USFWS or NMFS regarding threatened or endangered species.

Migratory Birds and Bald Eagles- SCDNR stated that the proposed project will have significant adverse impacts to migratory birds and bald eagles. According to SCDNR, the project site has provided habitat for migratory birds including waterfowl and their allies for decades. In addition, the project site serves as breeding, foraging, and wintering habitat for migratory wading birds, shore birds, and passerines. As described above, there are a number of areas upstream and downstream of the project site (including the Savannah National Wildlife Refuge) and a number of areas within adjacent watersheds that provide similar breeding, foraging, and nesting habitat. The restoration of the project site will result in the development of additional salt marsh areas where migratory birds and bald eagles will be able to forage.

Critical Area Permit- SCDNR stated that a Critical Area Permit is required, and they believe the proposed placement of fill material in critical areas will be considered more than minimal. As the State agency responsible for making this determination, OCRM issued a Critical Area Permit for the proposed project.

Water Quality- SCDNR stated that the excavation and placement of fill material associated with the proposed project may result in adverse impacts to water quality. According to SCDNR, marsh soils in the lower Savannah River estuary are known to contain hazardous contaminants and it may be the fourth most polluted river in the nation. SCDNR questioned whether radioactive contaminants, metals, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, petroleum hydrocarbons, phenols, pesticides, dioxin congeners, cyanide, and/or organotins may be located within the earthen embankments on the project site.

Freshwater impoundments and former ricefields, such as the ones located on the project site and at the Savannah National Wildlife Refuge, require routine maintenance. Ditches and earthen embankments are maintained to facilitate the management of these areas for wildlife. Material excavated from existing ditches is normally used to maintain the adjacent earthen embankments.

The Corps recognizes that there are potential sources of contamination within the Savannah River basin, such as the Department of Energy's Savannah River Site, approximately 100 miles upstream. However, our decision whether to require sediment testing is based on our evaluation of potential sources of contamination on or near the project site. In this case, the project site has been managed for recreation for more than 50 years, and material that was excavated on the project site will be placed back into the adjacent ditches to restore natural elevations. Therefore, the Corps does not believe that sediment testing is required for the proposed project.

SCDHEC is the state agency that is responsible for making decisions regarding water quality and Coastal Zone Management Act consistency and as described above, SCDHEC has issued the State authorizations for the proposed project. In accordance with 33 CFR 320.4(d), SCDHEC's water quality certification "will be considered conclusive with respect to water quality unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other water quality aspects to be taken into consideration". No additional water quality aspects were provided by EPA.

Objection to Proposed Mitigation Bank- According to SCDNR, their objections to the Nationwide Permit PCN should be considered as another objection to the proposed Clydesdale Mitigation Bank. SCDNR also objects to the use of NWP 27 to authorize restoration activities associated with the proposed mitigation bank. SCDNR believes the bank sponsor/permit applicant has misrepresented facts and has submitted information that is significantly flawed. They urged that no permits or certifications be issued for the proposed project.

Saltwater Intrusion- According to SELC, saltwater intrusion has threatened freshwater wetlands that are located on the SNWR and the project site. Based on coordination with Savannah District, a freshwater canal was constructed to *provide* a source of fresh water to adjacent property owners, such as SNWR and the project site. The fresh water canal allowed public and private property owners to manage existing freshwater impoundments that were located on their property to meet their own needs. SELC's claim that the existing freshwater canal was meant to *protect* managed freshwater impoundments that are adjacent to the Savannah River is inaccurate.

As described above, the purpose of the freshwater canal was to offset impacts to property owners associated with harbor deepening. However, the agreement to provide freshwater to the adjacent property owners did not require or obligate these property owners to manage the existing freshwater impoundments on their property as fresh water wetlands. If the intent had been to protect and/or manage these adjacent properties as freshwater impoundments, then the agreement would have required and been accompanied by appropriate real estate interests in these properties among other things.

SELC also provided the Corps with a copy of a 2008 letter from USFWS to the Corps regarding the need for maintenance of the existing freshwater canal. According to this letter, USFWS requested that the Corps secure funding to conduct the necessary maintenance of the existing freshwater canal. Based on our coordination with Savannah District, Corps of Engineers, the northern part of the freshwater canal has been rehabilitated and funding is available to maintain the remainder of the freshwater canal. As described above, the proposed project is not expected to adversely impact future maintenance of the existing freshwater canal.

Potential Impacts to SNWR- SELC quoted a letter from USFWS to the Corps regarding impacts that "could negatively affect management capabilities within the Savannah National Wildlife Refuge." The Corps was similarly concerned with this language and contacted the USFWS to request clarification regarding this statement. USFWS agreed that proposed restoration activities on the project site would not affect management capabilities on the SNWR.

Need for Freshwater Mitigation- SELC reiterated comments by SCDNR regarding the need for freshwater mitigation to offset the proposed impacts to the existing freshwater impoundment and ditches located on the project site. Both the preamble and the language of NWP 27 itself expressly clarify that compensatory mitigation is not required for NWP 27 activities. Likewise, the Charleston District normally does not require compensatory mitigation for activities that restore aquatic resource functions and services. For example, the removal of an earthen embankment to restore a natural stream channel does not require freshwater mitigation for the loss of open waters or the loss of shallow vegetated waters around the edge of the existing pond. The removal of the man-made pond and the restoration of the natural stream channel are considered beneficial for the surrounding watershed. Likewise, freshwater mitigation is not required for the proposed project.

As described above, the proposed project is expected to restore natural tidal flows and vegetation on the project site. Similar to other mitigation banks in South Carolina, NWP 27 is being used to authorize restoration activities in waters of the U.S. associated with the proposed project. The Corps has evaluated the proposed project and determined that it complies with the terms and conditions of NWP 27. SCDHEC has also evaluated the proposed project and issued a Critical Area Permit for the proposed project.

Special conditions will be included in the NWP 27 verification letter to insure the proposed activity would result in no more than minimal individual and cumulative adverse environmental effects and would not be contrary to the public interest. The special conditions are described in Appendix A of this document.

Compliance with Other Federal Laws ***(If specific law is not applicable write N/A; however, you must provide an 'effects' determination):***

a) Endangered Species Act: The project site is located immediately adjacent to the Savannah River and a portion of the project site (208 acres) is subject to the ebb and flow of the tide. The remainder of the project site 485 acres is not subject to tidal flows because existing earthen embankments, a freshwater canal, and water control structures allow the project site to be managed as a freshwater impoundment.
Name of species present: West Indian manatee (*Trichechus manatus*), shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), and wood stork (*Mycteria americana*).
Potential or Critical Habitat present: No
Effects determination: No effect
Date of Service(s) concurrence: N/A
Basis for "no effect" determination: Although manatees and sturgeon are known to occur in the Savannah River and wood storks are known to forage in tidal marshes adjacent to the Savannah River, the proposed project consists of removing an existing embankment and water control structures. The proposed project is expected to increase the total acreage of open waters and emergent marsh on the project site that are subject to the ebb and flow of the tide.
Additional information (describe steps taken to address concerns, as needed): N/A

b) Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat): The project site is located immediately adjacent to the Savannah River and a portion of the project site

(208 acres) is subject to the ebb and flow of the tide. The remainder of the project site (485 acres) is not subject to tidal flows because existing earthen embankments, a freshwater canal, and water control structures allow the project site to be managed as a freshwater impoundment.
Name of species present: Estuarine Emergent Wetlands, Estuarine Water Column
Effects determination: No effect.
Date of Service(s) concurrence: On December 8, 2011, NMFS indicated its support for the proposed work (*i.e.*, removing the dikes). However, NMFS expressed concerns about the proposed service area, the lack of an adaptive management plan to monitor potential impacts associated with the construction of the Savannah Harbor Expansion Project, and the proposed net improvement factor for marsh conversion areas and the larger lakes/canals.
Basis for "no effect" determination: The proposed project consists of removing the existing earthen embankment and water control structures, which will increase the total acreage of Estuarine Emergent Wetlands and Estuarine Tidal Waters on the project site.
Additional information: N/A

c) Section 106 of the National Historic Preservation Act:
Known site present: ☒ yes ☐ no
Survey required/conducted: ☒ yes ☐ no
The final report, entitled "Cultural Resources Survey of Clydesdale Plantation Tract," was submitted to the State Historic Preservation Office (SHPO) and SC Institute of Archaeology and Anthropology (SCIAA) and was accepted by SHPO on December 30, 2011.
Effects determination: No adverse effect
Rationale: The cultural resources survey of the project site identified two previously unrecorded sites. One site (38JA1053) is considered eligible for the National Register of Historic Places (NRHP). However, the ground disturbing activities associated with the proposed project are not expected to impact this area. The second site (38JA1054) is a cemetery and is not considered eligible for the NRHP. However, the second site is protected by state legislation regarding the protection and preservation of unmaintained and abandoned cemeteries (SCCL 6-1-35, 16-17-600). The draft conservation easement for the proposed mitigation bank includes a section that addresses the protection of these two sites. In addition, a special condition requiring the permittee to notify this office in the event that any previously unknown historic or archaeological remains are found on the project site is being included in the NWP 27 verification letter for the proposed project.
Date consultation complete: SHPO reviewed and approved the draft conservation easement on August 3, 2012.
Additional information: N/A

d) Section 401 Water Quality Certification:
Individual certification required: ☒ yes ☐ no
☒Issued ☐Waived ☐Denied

e) Coastal Zone Management Act:
Individual certification required: ☒ yes ☐ no
☒Issued ☐Waived ☐Denied
Additional information (optional):

f) Wild and Scenic Rivers Act:
Project located on designated or "study" river: ☐ yes ☒ no
Managing Agency:
Date written determination provided that the project will not adversely affect the Wild and Scenic River designation or study status:
Additional information (optional):
g) Other

Special Conditions Required *(include rationale for each required condition/explanation for requiring no special conditions)*: ☒ yes ☐ no

1) Cultural Resources: As described above, a cultural resources survey of the project site identified two previously unrecorded sites. One site (38JA1053) is considered eligible for the National Register of Historic Places (NRHP). However, the ground disturbing activities associated with the proposed project are not expected to impact this area. The second site (38JA1054) is a cemetery and is not considered eligible for the NRHP. However, the second site is protected by state legislation regarding the protection and preservation of unmaintained and abandoned cemeteries (SCCL 6-1-35, 16-17-600). The draft conservation easement for the proposed mitigation bank includes a section that addresses the protection of these two sites.

In addition, the Catawba Indian Nation requested to be informed if any Native American artifacts or human remains are discovered during construction. Therefore, the following special conditions will be included in the NWP 27 verification letter:

> **That the permittee understands and agrees that cultural resources on the mitigation bank site must be protected in accordance with Section B(12) Historical Sites of the conservation easement that was included in the Final MBI. This conservation easement must be recorded prior to conducting any of the authorized work on the project site.**
>
> **That the permittee agrees to stop work and notify this office immediately if any previously unknown historic or archeological remains are discovered while accomplishing the activity authorized by this permit. The Corps will initiate the Federal, State, and/or Tribal coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.**

2) Freshwater Control System: The Savannah District Corps of Engineers stated that the existing freshwater canal and the associated water control structures are currently undergoing rehabilitation. The Savannah District stated that the earthen embankment and the water control structures that are located adjacent to the existing Freshwater Control System on the project site must remain intact to prevent any adverse impacts to the adjacent Federal Project. Therefore, the following special conditions will be included in the NWP 27 verification letter:

> **That the permittee recognizes that the existing earthen embankment, the water control structures, and the freshwater canal on the northwestern side of the project site are**

That the permittee recognizes that the existing earthen embankment, the water control structures, and the freshwater canal on the northwestern side of the project site are located within an existing Federal easement, and that these features are associated with the existing Federal project.

That the permittee recognizes that this permit does not convey any real estate AND THAT PRIOR to conducting any work within the existing Federal easement, the permittee must coordinate with both the Charleston District and the Savannah District to define the Governments interests in the existing features on the project site and to determine whether modifications to these features by the permittee are consistent with the easement and are permissible.

3) Relationship to the Proposed Clydesdale Mitigation Bank: The proposed project consists of the restoration of natural tidal hydrology and vegetation on the project site. As described above, the Corps' evaluation of the PCN for the proposed work in waters of the U.S. is not dependent on the Corps' approval of the proposed Clydesdale Mitigation Bank; however, the establishment of the proposed mitigation bank is dependent on the bank sponsor obtaining a DA permit (NWP, Individual Permit, and/or Letter of Permission) to perform the necessary work in waters of the U.S. Although these two actions are related, the restoration of the natural hydrology and vegetation on the project site may comply with the terms and conditions of NWP 27 and be authorized regardless of whether a mitigation bank is ever established or operated on the project site.

Therefore, the following special condition will be included in the NWP 27 verification letter to ensure the permittee understands this distinction:

That the permittee understands the proposed activities in waters of the U.S. on the project site must comply with the terms and conditions of NWP 27 and this NWP verification letter. In order for the proposed activities to generate mitigation credits, these activities must also comply with the Final Mitigation Banking Instrument dated June 2012, including without limitation all performance standards.

Compensatory Mitigation Determination: Has the applicant avoided and minimized impacts to the maximum extent practicable? ☒ yes ☐ no If "NO", Explain:

(1) Is compensatory mitigation required for unavoidable impacts to jurisdictional aquatic resources to reduce the individual and cumulative adverse environmental effects to a minimal level?
☐ yes ☒ no *[If "no," do not complete the rest of this section and include an explanation of why not here]* The proposed project consists of the restoration of natural hydrology and vegetation on the project site. In accordance with the terms and conditions of NWP 27, "Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services."

(2) Is the impact in the service area of an approved mitigation bank? ☐ yes ☐ no

CESAC-RD- P
SUBJECT: Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification for the Above-Numbered Permit Application

(3) Is the impact in the service area of an approved in-lieu fee program? ☐ yes ☐ no
   i. Does the in-lieu fee program have appropriate number and resource type of credits available? ☐ yes ☐ no

(4) Check the selected compensatory mitigation option(s):
   ☐ mitigation bank credits
   ☐ in-lieu fee program credits
   ☐ permittee-responsible mitigation under a watershed approach
   ☐ permittee-responsible mitigation, on-site and in-kind
   ☐ permittee-responsible mitigation, off-site and out-of-kind

(5) If a selected compensatory mitigation option deviates from the order of the options presented in §332.3(b)(2)-(6), explain why the selected compensatory mitigation option is environmentally preferable. Address the criteria provided in §332.3(a)(1) (i.e., the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project):

District Engineer's Decision:

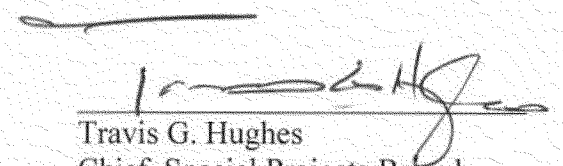
The proposed activity, with proposed mitigation (if applicable) would result in no more than minimal individual and cumulative adverse environmental effects and would not be contrary to the public interest *provided the special conditions and/or modifications identified in the above are incorporated.*

PREPARED BY:

Nathaniel I. Ball
Project Manager

4/12/13
Date

REVIEWED BY:



Travis G. Hughes
Chief, Special Projects Branch

4/12/2013
Date

CESAC-RD- P
SUBJECT: Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification for the Above-Numbered Permit Application

REVIEWED BY:

Tina B. Hadden
Chief, Regulatory Division

4/12/2013
Date

REVIEWED BY:

for Jonathan M. Jellema
District Counsel

4/16/2013
Date

APPROVED BY:

Edward P. Chamberlayne, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

16 APR 2013
Date

Exhibit C

RLC RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Suite 303 / Savannah, GA 31405
phone 912.443.5896 fax 912.443.5898

LETTER OF TRANSMITTAL

TO: **Nat Ball - USACE**
Christopher Stout-SCDHEC

Date:	6/26/2012 Job No.: 08-053
Re:	**Clydesdale Club Mitigation Bank**

We are sending you ☑ttached ☑nder separate cover via _____ the following items.

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of Letter ☐ Change Order ☐ _____

Copies	Date	No.	Description
1	6/2012		Revised BI Text
1	6/2012		Revised SOP Calculations
1	6/2012		Revised Figure 13
1	6/2012		NWP & Critical Area Permit Application

These are transmitted as checked below:

☐ For Approval ☐ Approved as Submitted ☐ Resubmit _____ Copies for Approval

☑ For Your Use ☐ Approved as Noted ☐ Submit _____ Copies for Distribution

☐ As Requested ☐ Returned for Corrections ☐ Return _____ Corrected Prints

☐ For Review and Comment _____

Remarks
Following review, please call us if you require any additional information. I cannot thank you both enough for working through the issues with us.

Sincerely,

Copy to Mr. Murphy McLean - SCMG
☑ Mr. Ellison Smith - Smith, Bundy, Bybee & Barnett

Signed Alton Brown, Jr.

CLYDESDALE MITIGATON BANK

FINAL BANKING INSTRUMENT

PREPARED FOR: SOUTH COAST MITIGATION GROUP, LLC

June 2012

RLC | RESOURCE+LAND CONSULTANTS

41 Park of Commerce Way, Suite 303 / Savannah, GA 31405
phone 912.443.5896 fax 912.443.5898

CLYDESDALE MITIGATION BANK

JASPER COUNTY, SOUTH CAROLINA
FINAL BANKING INSTRUMENT
June 2012
USACE PROJECT NO. SAS 2009-00756
RLC Project #08-053

TABLE OF CONTENTS

FIGURES:

APPENDICES

CLYDESDALE MITIGATION BANK
Jasper County, South Carolina
Final Banking Instrument
June 2012
USACE Project No. SAS 2009-00756
RLC Project #08-053

1.0 INTRODUCTION

South Coast Mitigation Group, LLC (SCMG) proposes to establish the Clydesdale Mitigation Bank. This bank will provide compensatory mitigation for unavoidable impacts to tidal waters and wetlands subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the State of South Carolina. This Mitigation Banking Instrument (BI) discusses existing habitats, site conditions, alterations that have occurred through past land management, restoration and enhancement opportunities and mitigation activities proposed to restore the functions and values through the preservation of 202.66 acres of tidal wetlands/waters, the preservation of 3.84 acres of upland/upland hammock, and the restoration of 487.6 acres of tidal wetlands/waters adjacent to the Savannah River. The mitigation bank site will total approximately 694.1 acres.

A draft prospectus was prepared and submitted to the Interagency Review Team (IRT) on 1 May 2009. The project was first presented to the IRT during an interagency meeting in Charleston on 1 July 2009. On 6 November 2009, a site visit and field review of the project was conducted by members of the IRT. Following that meeting and consideration of comments from all agencies, the subject 720.38 acre tract was purchased by the sponsor on 11 December 2009 and baseline monitoring and data collection was initiated.

The overall goal of this mitigation project is to breach the existing dikes and remove water control structures as necessary to restore and sustain chemical, biological, and physical characteristics of a tidal marsh system.

The purpose of this document is to formalize an agreement with the IRT for operating a commercial tidal wetlands mitigation bank. This banking instrument documents all activities associated with proposed tidal marsh restoration and enhancement mitigation necessary to obtain IRT approval.

2.0 SPONSOR/OWNER/AGENT

2.1 Bank Sponsor/Owner

South Coast Mitigation Group, LLC
Attn: Mr. Murphy McLean
Post Office Box 1541
Lake City, Florida 32056

The sponsor is the owner of the property associated with the mitigation bank and authorizes the USACE and IRT to conduct any on-site inspections necessary for review and approval of this document. SCMG, as the property owner and bank sponsor, certifies that they have the authority to make this request and enter into any and all agreements with the IRT during approval of the BI.

2.1.1 Qualifications of Sponsor for Bank Success

SCMG is an organization whose members have over 150 years of real estate development experience and have participated in residential, commercial, and industrial development throughout South Carolina, Georgia, North Carolina Florida, and Texas. For many of these projects, a project specific mitigation plan was required to compensate for unavoidable wetland impacts. Just like this mitigation bank, these sites included restoration, enhancement, and preservation mitigation, and monitoring requirements.

In addition, members of this company have participated in the development and approval of other mitigation banks in Florida and Georgia. The most recent of these are two mitigation banks in Florida (Thomas Creek Mitigation Bank and Nochaway Mitigation Bank) and a freshwater wetland mitigation bank located in

Bryan County, Georgia (Margin Bay Mitigation Bank).

2.2 Bank Co-Sponsor

Not applicable

2.3 Agent, Consultant, and/or Representative

Alton Brown, Jr.
Resource & Land Consultants
41 Park of Commerce Way, Suite 303
Savannah, Georgia 31405
abrown@rlandc.com
(912) 443-5896 (p)
(912) 443-5898 (f)

2.3.1 Consulting Firm's Experience

Resource & Land Consultants (RLC) has 27 years of combined knowledge and experience conducting environmental consultation in the Southeastern U.S. Primary services include assistance with projects to ensure compliance with environmental laws that include, but are not limited to: Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, the Coastal Marshlands Protection Act, the Georgia Sedimentation and Erosion Act of 1975, and the Shore Protection Act. Members of RLC have provided environmental consulting services for projects in South Carolina, Georgia, Florida, and Alabama.

Specific to mitigation banking, RLC has provided a variety of services on numerous mitigation banks. Services include extensive wetland delineation, threatened and endangered species surveys, hydrogeomorphic assessment, functional assessment, baseline monitoring, bank prospectus development, banking instrument development, and post construction monitoring. The following provides a list of banks which members of RLC have participated at various stages.

- Old Thorn Pond Wetlands Mitigation Bank Bulloch County, Georgia
- Magnolia Swamp Wetland/Stream Mitigation Bank Taylor County, Georgia
- Chatham County Wetlands Mitigation Bank Chatham County, Georgia
- Ogeechee River Wetlands Mitigation Bank Bryan County, Georgia
- Beaufort County/BJWSA Wetlands Mitigation Bank Beaufort County, South Carolina
- Black Creek Wetlands Mitigation Bank Bulloch County, Georgia
- Salt Creek Tidal Marsh Mitigation Bank Chatham County, Georgia
- Hog Creek Wetlands Mitigation Bank Ware County, Georgia
- Phinizy Swamp Wetlands Mitigation Bank Richmond County, Georgia
- Margin Bay Wetlands Mitigation Bank Bryan County, Georgia
- Bath Branch Stream Mitigation Bank Richmond County, Georgia
- Patriots Pride Stream Mitigation Bank Wilcox County, Georgia
- Vallambrosa Wetland Mitigation Bank Chatham County, Georgia
- Poor Robin Wetland Mitigation Bank Screven County, Georgia
- Elbow Swamp Wetland Mitigation Bank Bryan County, Georgia
- Poplar Grove Wetland Mitigation Bank Dorchester County, South Carolina

2.4 Experience of Design and Construction Team

The design team associated with the project includes RLC, Thomas & Hutton Engineering and Nutter & Associates. The sponsor has met with several contractors regarding the preliminary mitigation plans and discussed general construction techniques to be implemented. Because a contractor will not be chosen until bank approval, the sponsor will continue to interview contractors and equipment operators who have participated on other similar construction projects and site work associated with tidal impoundments.

3.0 SITE LOCATION (Coordinates, HUC Designation)

The proposed bank site is located north of the Savannah River and west of Highway 17 (approximately two miles north of Savannah, Georgia) within Jasper County, South Carolina (Latitude 32° 07' 04.26" Longitude 81° 04' 39.37") (Figure 1). Figure 2 provides a copy of the U.S.

Geological Survey for the Savannah and Limehouse Quadrangles with the general site boundary depicted. The Hydrologic Unit Code (HUC) for the site is 03060109 (Figure 3)

4.0 SERVICE AREA

Figure 4 depicts the proposed service area associated with the project. This service area was developed using Attachment C in the *Joint State and Federal Administrative Procedures for the Establishment and Operation of Mitigation Banks in South Carolina*. As depicted on the map, the project will provide mitigation for the Sea Island and Coastal Marsh Zone. The proposed primary service area will include HUC Codes 03060109/Lower Savannah and 03060110/ Calibogue Sound/Wright River. The secondary service area will include 03050208/Broad River, 03050210/St Helena Drainage, and 03050207/Salkehatchie/Combahee. The tertiary service area will include 03050206/Edisto River, 03050202/Stono River, 03050201/Cooper River, and 03050209/Bulls Bay. These service area limits were provided by the USACE as part of the prospectus review.

Table 1.

Service Area/SOP Zone	HUC CODES	Watershed	Counties
Primary/ Zone 1	03060109	Lower Savannah	Jasper
Primary/ Zone 1	03060110	Calibogue Sound/ Wright River	Jasper & Beaufort
Secondary/ Zone 3	03050208	Broad River	Beaufort
Secondary/ Zone 3	03050210	St. Helena Island Drainage	Beaufort
Secondary/ Zone 3	03050207	Salkehatichie/ Combahee	Beaufort & Colleton
Tertiary/ Zone 5	03050206	Edisto River	Colleton & Charleston
Tertiary/ Zone 5	03050202	Stono River	Dorchester & Charleston
Tertiary/ Zone 5y	03050201	Cooper River	Charleston & Berkeley
Tertiary/ Zone 5	03050209	Bulls Bay	Charleston

The proposed bank will be used to offset adverse impacts to brackish and saltwater tidal marsh and shallow open waters within the proposed service area. The project site is located on the Savannah River and the watershed is associated with this major tributary is present within the state limits of both South Carolina and Georgia. The sponsor reserves the right to convey credits within the State Limits of Georgia. The sponsor acknowledges that any conveyance of credits to satisfy permit requirements of a project within the state boundary of Georgia would require prior approval by all members of the IRT associated with the both the USACE Charleston District and Savannah District.

5.0 WATERSHED ASSESSMENT

A general watershed assessment was conducted to determine the overall value of the project, complementing features, and needs within the Savannah River Watershed.

5.1 Size & Position in Watershed

Savannah River Basin is 179 square miles in North Carolina, 4,530 square miles in South Carolina, 5,870 square miles in Georgia and 10,579 square miles total. The project area totals 694.1 acres and is located within the Savannah Coastal/South Atlantic Coastal Watershed. This area is identified as Tidewater Area (153B) on the Land Resource Regions Map.

5.2 Watershed-Scale Features

The project site is located within a river corridor that currently contains a large number of protected properties. According to the Low Country Open Land Trust, protected lands within the Savannah River Corridor identified as The Savannah River Preserve (SRP) are "an extension of the decade-old South Lowcountry Focus Area. The SRP is a consortium of private landowners, public entities and non-profit organizations that has compiled 110,000 acres of protected lands associated with the Savannah River". Regionally, the proposed mitigation site will add protected lands to a long list of conservation properties within the Savannah River watershed.

The property is identified as a priority area by the Nature Conservancy's South Lowcountry Focus Area and is immediately downstream of the current wildlife refuge boundary. Use of this property as a mitigation bank and protection of this property in perpetuity is consistent with the goals and objectives of both plans. A copy of the Savannah River Preserve Executive Summary and maps depicting both the Lowcountry Focus Area and Savannah River

Preserve Boundary are provided in Appendix A.

In addition to the SRP, the project site is located immediately downstream of the Savannah National Wildlife Refuge (SNWR) Boundary. SNWR was established in 1927 and lies on both the South Carolina and Georgia sides of the Savannah River. Of the approximately 29,000 acres, the majority, approximately 23,000 acres consist of riverine bottomland hardwoods and tidal freshwater marsh. The refuge also contains 3,000 acres of upland hardwoods exists along the eastern boundary and 3,000 acres of impoundment system managed for migratory wading birds and waterfowl.

The refuge supports a large variety of wildlife including: ducks, geese, wading birds, shorebirds and several protected species including bald eagles, wood storks, manatees and shortnose sturgeon. Locally, the property is immediately downstream of the SNWR and will add to the 29,000 acres of protected lands.

The proposed mitigation project includes the restoration of tidal wetlands within the Savannah River Watershed. This project will restore the natural essential fish habitat, historic flood plain widths, flooding duration, aquatic edge, community composition, opportunity for marsh access, etc. While the site is small relative to the size of the watershed, the project site supports the on-going efforts associated with the SRP and the SNWR by providing another property on the Savannah River that will be protected in perpetuity and the restoration activities will provide a relative improvement in watershed functions and values.

Finally, the project will include restoration of tidal marsh adjacent to a section of river that is listed as a 303(d) tributary (see EPA web site address http://iaspub.epa.gov/tmdl_waters10/huc_rept.control?p_huc=03060109&p_huc_desc=LOWER SAVANNAH) Because wetlands provide numerous water quality functions, restoration of natural tidal flows, tidal vegetation, and flood plain/wetland connectivity is always beneficial and will contribute to the overall improvement in water quality within the watershed.

5.3 Structural Compatibility

It is not anticipated that any existing or future man-made features within the site or within close proximity will have any adverse affect on the success of the proposed mitigation bank.

Appendix B contains a plat identifying all easements and a description of each easement by the sponsor's legal counsel. The encumbering easements that are associated with the property include a gas line easement and an access easement utilized by the adjacent landowner. Neither of these easements has been included in the mitigation bank limits and neither will adversely impact the short or long term success of the project. No easements which prohibit the establishment or operation of a mitigation bank are associated with the property.

Signage will be placed along the boundary of each of these easements and a letter will be provided to each easement holder describing the status of the site as a wetlands mitigation bank, the level of protection associated with the property and ecological significance of the restored wetlands/waters. Since these easements do not allow for operation of equipment or for work to occur outside the legal limits of the easement boundaries, no secondary impacts associated with maintenance activities performed within the gas or power line easement is anticipated.

At the request of the Charleston District USACE, RLC contacted the Georgia Ports Authority and the Savannah District USACE to discuss the proposed mitigation activities associated with the Savannah River Harbor Expansion Project. Because the mitigation plan has not been finalized, this information is not available to the public. However, the project manager at the Savannah District USACE provided a general description of the mitigation plan as it relates to Clydesdale Mitigation Bank. Generally the mitigation plan includes removal of the tide gates, restoration of the bank of the Back River at the tide gate location and installation of a sill/weir structure to minimize the effects of the salinity wedge. According to the Savannah District project manager, the goal of the plan is to maintain the current brackish habitat at the banks location. Due to the location of the project and because the USACE has not predicted habitat change at this location, no impacts to the proposed functions and values of the mitigation site are anticipated. Once restored, the site will function as tidal marshes

adjacent to the Savannah River. Salinity levels, water quality, and vegetative composition will be consistent with other naturally functioning and unimpounded tidal marsh areas within this section of the Back River.

5.4 Land Use Compatibility

Based on review of aerial photography and field reconnaissance/ground truthing, adjacent and bordering land uses include the following:

A. **North:** A portion of the freshwater canal operated by the U.S. Fish and Wildlife Service (USFWS) is located immediately north of the project site. The area on the north side of the canal consists of tidal marsh and Highway 17.

B. **East:** Highway 17 is located immediately east of the site. Across Highway 17 (further east) are the spoil impoundments and additional marsh. Due to the location and associated condition of adjacent properties, it is not likely that the land uses immediately east of the site would change.

   It should also be noted that the proposed site for the Jasper Ocean Terminal is located approximately 6.8 miles east of the mitigation bank.

C. **South:** The site is bordered by the Savannah River to the south. The USACE is proposing improvements to the front river as part of the Savannah River Harbor Expansion Project. RLC contacted the Georgia Ports Authority and USACE to discuss the proposed mitigation activities associated with the project and to determine if this plan would adversely impact the restoration efforts within the mitigation bank. As indicated in Section 5.3 of this document, the proposed harbor deepening project and current mitigation plan should have a negligible, if any, impact on the proposed mitigation bank.

D. **West:** Another large impoundment, owned by Clydesdale Club, LLC. is located immediately adjacent to and west of the project. This tract is used by the current land owners for recreation only. While additional studies must be completed, SCMG is considering adding this property to the existing mitigation bank as a possible Phase II. SCMG has begun the initial review, preliminary site assessments, boundary surveys, vegetative assessments, hydrologic modeling, etc. in anticipation of a possible Phase II addition to the proposed mitigation bank.

   Immediately adjacent to and west of Clydesdale Club, LLC., the USFWS owns a large area of restored tidal marsh that is a part of the Savannah Wildlife Refuge. It should be noted that the Savannah Wildlife Refuge has proposed an acquisition plan which will increase the overall size of the Savannah Wildlife Refuge. While this site is not included in the expansion plan, the proposed tidal wetland restoration project will not conflict with the land uses of the refuge and will provide additional protection of properties adjacent to the refuge. A copy of the expansion plan is provided in Appendix A.

Based on this review, the proposed mitigation bank is perfectly positioned along a major tributary with no conflicting adjacent land uses. Few other tracts afford a more appropriate location for a mitigation bank.

5.5 Flood Plain Management Goals

The proposed project falls within the goals and objectives of standard flood damage prevention measures associated with the Savannah River and generally including but not limited to:

1. controlling activities which may increase flood damage or erosion
2. preventing or regulating construction of flood barriers
3. controlling alteration of natural floodplains
4. controlling filling, grading, or development within floodplains.

The proposed mitigation bank will further protect and enhance the Savannah River. Breaching of dikes and restoration of floodplain and flood way width will result in an overall improvement within

this watershed.

5.6 FAA-Regulated Sites

No airports or other FAA regulated sites are located within a 5 mile radius of the site.

5.7 Residential or Commercial Development

The site is not a part of a residential or commercial development and no residential or commercial development is located adjacent to the site.

5.8 Public Access

The site currently consists of private property and public access is not afforded. Following completion of the tidal restoration project, the site will generally consist of tidal marshes and tributaries tied to and associated with the Savannah River. As with all marsh in South Carolina, public access will not be restricted.

6.0 EXISTING SITE CONDITIONS

The tract from which the mitigation bank will be established totals 720.38 acres. Only 694.1 acres will be included in the proposed bank area. The following table provides an summary of tract and mitigation bank acreages.

Table 2.

Area	Acreage
TOTAL TRACT AREA	720.38 ACRES
GAS LINE EASEMENT (NOT INCLUDED IN BANK)	10.9 ACRES
GOVERNMENT CANAL EASMENT (NOT INCLUDED IN BANK)	14.08 ACRES
POWERLINE EASEMENT (NOT INCLUDED IN BANK)	0.8 ACRES
ACCESS EASEMENT (NOT INCLUDED IN BANK)	0.5 ACRES
MITIGATION SITE (INCLUDING RESTORATION & PRESERVATION AREA)	694.1 ACRES

The habitats within the site are typical for maintained impoundment areas along the coast of South Carolina. Tract location and elevations confirm the historic habitats and prior to altering of the natural system through installation of dikes and ditches, the project site would have consisted of tidally influenced wetlands and waters.

Past land uses and historic alterations were associated with agricultural and recreational operations. The impoundment was originally constructed during 1700's and 1800's for rice production. The dike, ditch, and structure network has been reconstructed, modified, and reconfigured since that time and as land use changed from agriculture to its current use for recreation. As is typical for these types of agricultural practices, tidal marshes were impounded by constructing a dike and water levels were controlled within the impoundment area by an extensive network of drainage ditches, interior dikes and water control/rice gate structure. Following the collapse of the rice business, these impoundment areas were used for other agricultural crops such as corn, cotton, lettuce, etc. Over time other options for agricultural production were chosen due to the high cost associated with maintaining these impoundments and liability of crop failure (if dike failed).

The project site also contains a large open water feature. Based on review of past land use activities and conversations with previous land owners, it is our understanding that this area was excavated and used as a source of borrow material during the construction of Highway 17. The lake is currently managed as a freshwater lake and contains freshwater vegetation and fish species.

The site contains a gas line right of way that is mowed and maintained as herbaceous habitat. This right of way has not been included in the mitigation area and is excluded from the bank calculations. This easement totals 10.9 acres.

For the past 30 years, the tract has been used for recreation purposes (i.e. hunting, fishing, etc.). This recreational land use continues today. Table 3 provides a breakdown of habitats within the proposed mitigation site. Figure 5 depicts the location of each habitat currently found within the property.

Table 3.

Unit	EXISTING HABITAT WITHIN RESTORATION AREA PRIOR TO INITIATION OF MITIGATION ACTIVITIES	Acres
1	FORESTED UPLAND	2.26
2	FORESTED WETLAND	82.15
3	SHRUB/SCRUB WETLAND	194.06
4	MOWED FIELD	81.01
5	FLOODED FIELD	62.06
6	INTERIOR DIKE (<4' MSL)	25.61
7	EXTERIOR DIKE (>4'MSL)	2.85
8	INTERNAL CANAL/DITCH	9.97
9	OPEN WATER POND	31.47
10	TIDAL MARSH	189.46
11	TIDAL WATERS	13.2
	TOTAL	**694.1**

6.1 USACE Verified Delineation of Waters

A copy of the wetland delineation submittal package can be found in Appendix C.

6.2 Acreage of Wetlands by Type

While the property is currently managed as an active and intact impoundment, the site would have previously consisted of tidal marsh habitat. Table 4. provides a summary of current wetland habitats present within the property.

Table 4.

HABITAT TYPE	AREA (AC.)
FRESHWATER WETLAND (non-tidal)	419.28
OPEN WATER POND (non-tidal)	31.47
INTERNAL CANAL/DITCHES (non-tidal)	9.97
EXTERNAL CREEKS/CANALS (tidal)	13.2
MARSH (tidal)	189.46
UPLAND (including dikes)	30.72
MITIGATION BANK AREA	**694.1**

6.3 Topography

A combination of available topographic data and field survey data was used in the topographic assessment of the mitigation site and during development of the hydrologic model. One foot LIDAR DEM & Contours were available for this area of Jasper County and a copy of the LIDAR information can be found in Appendix D.

Elevations within the bank site vary from 0 to 4 feet NAVD 88 and are identical to elevations outside the impoundment. Survey data verified the LIDAR and confirmed lower elevations within the site vary from -0.39' MSL to 0.79' MSL, dikes vary from less than 3.0' MSL (interior dike) to 5'+ MSL (primary dike) and areas identified as upland are between 4' MSL and 5' MSL. All survey elevations are presented in NAVD 88. A cross-sectional depiction of the tract is provided in Appendix E.

6.4 Vegetation List, Past/Present/Potential

When considering the landscape position of the proposed bank, significant modification to the vegetative condition of the site has occurred within the project site.

6.4.1 Past/Natural Vegetative Composition:

Were the project site not maintained as an impoundment and were dikes and ditches not installed within this tract, this site would contain a functioning tidal marsh wetland. Natural and unaltered hydrologic and vegetative conditions can be easily observed within tidal marsh areas immediately adjacent to the tract as well as upstream and downstream on the Savannah River.

Within reference areas immediately adjacent to and outside of the impoundment, the vegetative composition is dominated by saltmarsh cordgrass (*Spartina alternaflora*), black needle rush (*Juncus romeranus*), and big cordgrass (*Spartina cynosuroides*).

6.4.2 Present Vegetation:

In order to provide a description of baseline vegetative conditions within the site, each habitat was documented using the Corps' Wetland Determination Data Form from the Coastal Plain Supplement (Appendix C). With regard to vegetation, the site can generally be described as follows:

A. Forested Upland (Unit 1):

Approximately 2.26 acres of the tract consists of upland. This habitat is currently dominated by

Chinese tallow tree (*Sapium sebiferum*), hackberry (*Celtis tenuifolia*), Chinaberry (*Melia azedarach*), live oak (*Quercus virginiana*), loblolly pine (*Pinus taeda*) water oak (*Quercus nigra*), wax myrtle (*Myrica cerifera*), false willow (*Baccharis angustifolia*), silverling (*Baccharis halimifolia*) and black berry *(Rubus spp.)*.

B. Forested Wetland (Unit 2):

Approximately 82.15 acres of the site consist of forested managed wetlands. This area is dominated by Chinese tallow tree, wax myrtle, false willow, silverling and black berry.

C. Shrub Scrub Wetland (Unit 3)

The site contains approximately 194.06 acres of shrub scrub habitat. This area has been historically maintained specifically for deer and hog hunting. These shrub/scrub areas provide outstanding cover and bedding and browsing habitat. The fallow fields are currently dominated by a variety of sapling tree, shrub and herbaceous species which generally include Chinese tallow tree, wax myrtle, false willow, silverling and black berry. Some areas on the northern portion of the tract contain red maple *(Acer rubrum),* netted chain fern (*Woodwardia aerolata*) Virginia chain fern (*Woodwardia virginica*), soft rush, and sedges. In addition, many of the herbaceous species noted in the fields are found within this habitat. Note that the condition of each area on the overall impoundment changes depending on the management plan of the owner. Thus, an area which is currently flooded today may be open field next year or an area which is fallow with shrub species may be planted in rye, etc.

D. Mowed Field (Unit 4)

The site contains approximately 81.01 acres of maintained and fallow fields. These fields contain a variety of herbaceous species, are mowed frequently and planted for wildlife management and hunting. The vegetative composition is dependent on the species for which the field is managed. Dove fields are typically planted in corn, sunflowers, and/or millet. Deer and hog fields are typically planted in a wildlife mix containing rye, winter peas, clover, etc. Areas which are not planted contain a variety of native grasses and herbaceous species include sedges, fescue (*Festuca spp.*), bahia grass (*Paspalum notatum*), rye grass *(Lolium),* Johnson grass (*Sorghum halepense*), St. Andrews Cross (*hypericum spp.)*, wool grass (*Scirpus spp.*), soft rush (*Juncus effusus*), crab grass (*Digitaria spp.*) Bermuda grass (*Cynodon dactylon*), rattle box (*Sesbania macrocarpa*), sedges (*Carex spp.*), dog fennel (*Eupatorium spp.*), festuce (Festuca spp.), purple top (Verbena spp.) pokeweed, bluestem (Andropogon spp.) golden rod (Solidago spp.), freshwater pennywort (Hydrocotyle spp.), and a variety of other species.

E. Flooded Field (Unit 5)

Approximately 62.06 acres of the site are maintained in a flooded condition while other areas remain dry outside of the waterfowl hunting season. The flooded fields are managed for water fowl hunting and are drained summer and early fall months for preparation prior to duck season. This portion of the site contains a variety of species including but not limited to rattlebox, big cordgrass, cat tail *(Typha latifolia),* soft rush, and various sedges.

F. Interior Dike (Unit 6)

Based on the final survey, the project site contains 25.61 acres of dike less than 4 feet MSL (Figure 6.) The interior dikes allow for internal management of water elevations between impoundment cells. These dikes are mowed regularly and operate as the road system for the property. Herbaceous species present along the bank include sedges *(Carex spp.)*, soft rush (*Juncus effusus*), etc. Tallow tree, water oak, hackberry, wax myrtle, false willow, eastern red cedar (*Juniperus virginiana*), pokeweed (*Phytolacca americana*) and bracken fern (*Pteridium aquilinum*) dominate the dikes. Due to the elevations of interior dikes, it is anticipated that these areas will be flooded twice daily and will naturalize into tidal marsh habitat following completion of the tidal restoration activities.

G. Exterior Dike (Unit 7)

Based on the final survey, the project site contains 2.85 acres of dike greater than 4 feet MSL. The primary dikes on the north and south side prevent all tide action from entering the

mitigation area. These dikes are mowed regularly and operate as the road system for the property. Herbaceous species present along the bank include sedges *(Carex spp.)*, soft rush (*Juncus effusus*), etc. Tallow tree, water oak, hackberry, wax myrtle, false willow, eastern red cedar (*Juniperus virginiana*), pokeweed (*Phytolacca americana*) and bracken fern (*Pteridium aquilinum*) dominate the dikes.

As indicated in the table below, the existing dikes vary in elevation from 3.5 feet MSL to 6.9 MSL (NAVD 88). The following Table includes the location, typical elevation, length and area for the dikes present within Clydesdale Mitigation Bank.

Table 5 (Units 6 & 7).

	Location	Typical Elevation (MSL NAVD 29)	Area (ac.)
Primary Dike	South	5.2	2.85
Primary Dike	North	6.9	1.4*
Lesser Dikes	Interior	3.5	25.61

* not included in bank boundary

H. Internal Ditch/Canal (Unit 8):

The proposed restoration area contains approximately 9.97 acres of internal ditches and canals. These areas contain little to no vegetation except along the bank.

The ditches within the site vary in depth from 2 feet to 6 and vary in width from 2 feet to 15. The majority of these ditches consist of open water habitat with tree, shrub and herbaceous species present along the ditch edge and waters edge. Following restoration of the tidal marsh habitat, these ditches will serve as important habitat for a variety of tidal marsh species and provide important aquatic edge along the water/marsh interface.

I. Open Water Pond (Unit 9):

The site also contains approximately 31.47 acres of open water pond. This area was used as a source of borrow material and created during the construction of Highway 17. While freshwater today, this area will consist of tidal open water habitat upon completion of the mitigation efforts.

No vegetation is present within the open water pond/canal areas. The banks contain species such as tallow tree, silverling, wax myrtle, blackberry, soft rush, cat tail, and sedges.

J. Tidal Marsh (Unit 10)

The 189.46 acres of tidal marsh is dominated saltmarsh cordgrass, black needle rush, and big cordgrass.

K. Tidal Waters (Unit 11)

Approximately 13.2 acres of tidal creeks are present within the proposed preservation area.

6.4.3 USFWS National Wetlands Inventory Map (NWI) Classification:

The NWI for the Savannah & Limehouse Quadrangles (Figure 7) classifies the bank site as the following:

- **Restoration Area:** Palustrine, Emergent, Persistent, Seasonally Flooded, Diked/Impounded (PEM1Ch) Palustrine, Emergent, Persistent, Seasonal-Tidal (PEM1R)

- **Reference Area/Preservation Area (non impoundment areas):** Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded (E2EM1P)

6.4.4 Potential/Future Vegetation:

Following completion of the mitigation activities, the site will again consist of marsh dominated by saltmarsh cordgrass, black needle rush, and big cordgrass.

6.5 Hydrologic Conditions

Prior to altering of the natural system, the project site would have experienced tidal flooding twice daily. Existing elevations which range from -0.3 MSL NAVD 88 to 0.79 MSL NAVD 88 confirm the historic habitat was tidal marsh. The natural hydrology within the site has been 100 percent impaired and altered by past construction of dikes and installation of drainage ditches. As with most large well maintained impoundments, water elevations within the site can be managed to the desired depth.

The site currently consists of eight cells (see Figure 8). Each of these interior impoundments are separated by a network of dikes with elevations of approximately 4.8 MSL NAVD 88. Primary and lateral ditches and existing water control structures (wooden rice gates) allow management of each impoundment independently of the other. For example: Cell 1 is maintained in a dry condition for dove hunting. Cell 2, immediately adjacent to and west of Cell 1, is maintained in a flooded condition to prevent vegetation growth and create an open water habitat for waterfowl hunting. Cell 3 & 4 are maintained dry from February until October and then mowed and flooded prior to waterfowl hunting season. Cell 5, Cell 6, and Cell 7 are maintained as a shrub scrub habitat for hogs and deer. Cell 8 is maintained as an open pond for fishing and forested adjacent to Highway 17 as a buffer. At any given time, the management practice of any one of these cells can be altered from dry to flooded, flooded to dry, field to shrub scrub (within several years), shrub scrub to field (within months), etc.

In summary, the hydrology has been altered in two ways.

1. All tidal influence has been prohibited by installation of dikes and gates.

2. Existing water control structures and ditches has enabled the site to be managed in a drained and fully dry condition.

While rainfall events can be observed by the baseline hydrology data, well data associated with the site indicates that most areas do not even experience saturation in the upper 16 inches for suitable periods to meet the criteria for wetland hydrology.

6.5.1 Aquatic Function Impairment

The dikes and rice box structures prevent tidal flows. Altered aquatic functions included tide range, duration of flooding (some areas permanently flooded while other areas were completely drained), general vegetative community alterations, etc.

6.6 Wildlife Utilization Past/Present/Future:

Just as with the vegetative conditions, wildlife utilization is dramatically different than it was prior to impounding the marsh. Following completion of the mitigation project, natural wildlife utilization will be restored.

6.6.1 Past Wildlife Utilization:

The mitigation site contains tidal marsh and tidal waters preservation and tidal marsh and tidal waters restoration. Just like the preservation area, the restoration area, if not currently managed impoundment, would naturally consist tidally influenced marshes adjacent to the Savannah River.

There are a wide variety of bird species that utilize tidal marshes for nesting and feeding habitat. A general list of species includes wood storks, ducks, ibises, herons, anhingas, cormorants, pelicans, loons, geese, kites, plovers, rails, and terns. A thorough list of bird species can be found at http://www.npwrc.usgs.gov/resource/birds/chekbird/r4/savannah.htm. A copy of this publication is included in Appendix F.

Fishes typically associated with tidal marshes and creeks include Atlantic Inland Silverside (*Menidia beryllina*), Sheepshead Minnow (*Cyprinodon variegates*), Sailfin Molly (*Poecilia latipinna*), Red Drum (*Sciaenops ocellatus*), White Mullet (*Mugil curema*), Striped Mullet (*Mugil cephalus),* Mummichog (*Fundulus heteroclitus),* Rainwater Killifish (*Lucania parva),* Spot (*Leiostomus xanthurus*), Freshwater Goby (*Ctenogobius shufeldti),* Summer Flounder (*Paralichthys dentatus),* Naked Goby (*Gobiosoma bosc),* and Speckled Sea Trout (*Cynoscion nebulosus).*

Invertebrate macrofauna provide food for many birds and fish species and contribute to the overall life of the marsh. The species consume algae, ditrituse, and provide many other important fuctions within the natural marsh community. A list of macro-invertebrate species typically associated with tidal wetlands and waters adjacent to the Savannah River is presented in Appendix G. Macrofauna most often associated with tidal marsh habitat include mussels, crabs, shrimp, and snails.

6.6.2 Present Wildlife Utilization:

Since conversion of the property to an active impoundment and non-tidal habitat, the site has transitioned to support mammal species not typically associated with tidal marsh habitat. Mammals observed during on site surveys include whitetail deer, feral hog, grey squirrels, rats,

raccoons, rabbits, opossums, coyote, armadillo, grey fox and red fox. Reptiles noted during numerous site visits include alligator, cottonmouth, and rat snake.

A wide variety of birds have been observed within the project site including wood stork, colonial wading birds, pelicans, ducks, kites, eagles, ospreys, hawks, doves, crows, etc. Many of these species will continue to use the property following restoration.

Fish species documented during the baseline survey included Bluegill (*Lepomis macrochirus),* Eastern Mosquitofish (*Gambusia holbrooki),* Bowfin (*Amia calva*), Black Crappie (*Pomoxis nigromaculatus*), Largemouth Bass (*Micropterus salmoides*), and Longnose gar (*Lepisosteus osseus*)

6.6.3 Future Wildlife Utilization:

Following completion of the mitigation activities and restoration of the natural tidal prism, the site will support fish, wildlife, and macro invertebrate species commonly associated with tidal waters and marshes of South Carolina.

6.7 Soil, Current & Relic

Natural Resources Conservation Service Soils Survey (NRCS) for Jasper County identifies the mitigation site as containing the following soil types:

- Bohicket (BK): properties and qualities are 0 to 1 percent slope, land form-marshes, very poorly drained, frequently flooded and ponded, and slightly to moderately saline. Water table is at 0 inches. Typical profile is 0-10 inches/silty clay loam, 10-49 inches/silty clay.

- Hobonny (HB): properties and qualities are 0 to 2 percent slope, land form-flood plains, very poorly drained, frequently flooded and ponded, and slightly to moderately saline. Water table is at 0 inches. Typical profile is 0-2 inches/silty clay loam, 2-90 inches/muck..

- Levy (LE): properties and qualities are 0 to 1 percent slope, landform-marshes, very poorly drained, frequently flooded and ponded, and slightly to moderately saline. Water table is at 0 inches. Typical profile is 0-5 inches/clay, 5-42 inches /clay.

All soils within the bank boundary are listed as hydric in the South Carolina hydric soils list. A copy of the NRCS soils map for the site is present in Figure 9.

While the site has been altered such that most of the project area has been drained, hydric conditions within the soils remain apparent. The following hydric soil indicators where documented within the project site.

- F6: matrix value 3 or less and chroma 1 or less and 2% or more distinct or prominent redox concentrationsas soft masses or pore linings
- A4. A hydrogen sulfide ordor within 12 inches of the soil surface.
- A9. A layer of muck 0.5 inches thick with avalue 3 or less and chroma 1 or less within 6 inches of the soil surface.
- A11. A layer with a depleted matrix that has 60% or more chroma 2 or less starting within 12 inches of the survece. Minimum thickness is 6 inches and loamy/clayey layer above the depleted matrix have a value of 3 or less and chroma 2 or less.
- A12. A layer at least 6 inches thick with a depleted matrix that has 60% or more chroma 2 or less startingbelow 12 inches from the surface.

It should also be noted that subsidence has occurred as this area was historically maintained for agricultural purposes. However, as with all restored impoundments, accretion and accumulation of sediments will occur over time and will be naturally transported into the site via the tidal waters of the Savannah River.

6.8 Threatened & Endangered Species

RLC conducted a preliminary threatened and endangered species survey within the project area and has reviewed information available through the South Carolina Department of Natural Resources Natural Heritage Program. A copy of that information can be found on the web at https://www.dnr.sc.gov/pls/heritage/species.login
A list of protected species can be found in Appendix H.

Prior to conducting the field survey, RLC reviewed available state and federal records to determine if

any listed species were known to occur within and/or in the general vicinity of the project area. Available resources such as aerial photographs, wetland delineation surveys and topographic maps were also examined in an effort to complete a preliminary determination of existing habitats prior to the field visit. Once this information was assessed, RLC conducted a thorough pedestrian survey of the project site. During the field survey, age and species composition of existing habitats were recorded, photographs were taken to document the current condition of the site and vegetative community habitat types were identified.

The USFWS lists' the following plant and animal species as endangered or threatened in Jasper County, South Carolina:

Plants
American chaffseed (*Schwalbea americana*)
Canby's dropwort (*Oxypolis canbyi*)
Pondberry (*Lindera melissifolia*)

Mammals
Finback whale (*Balaenoptera physalus*)
Humpback whale(*Megaptera novaeangliae*)
Right whale (*Balaena glacialis*)
West Indian manatee (*Trichechus manatus*)

Reptiles
Frosted flatwoods salamander(*Ambystoma cingulatum*)
Green sea turtle(*Chelonia mydas*)
Kemp's ridley sea turtle(*Lepidochelys kempii*)
Leatherback sea turtle (*Dermochelys coriacea*)
Loggerhead sea turtle (*Caretta caretta*)

Birds
Piping plover (*Charadrius melodus*)
Wood stork (*Mycteria americana*)
Red-cockaded woodpecker (*Picoides borealis*)

Fish
Shortnose sturgeon (*Acipenser brevirostrum*)

Because the site consists of a managed impoundment, natural habitats associated with the species listed above do not exist. However, protected species which have been observed within the property include the bald eagle and wood stork. On several occasions, wood storks were observed feeding within the 64 acre "duck pond" located on the south western portion of the property. While this area has been drained many times in the past, this portion of the property has been maintained in a flooded condition to reduce the overall cost associated with site preparation and mowing prior to waterfowl hunting season.

The proposed project includes restoration of tidal marsh habitat. This restoration habitat will benefit countless fish, insect, macro-invertebrate, and bird species. The restored area will provide outstanding feeding habitat for colonial wading birds as well as the federally listed wood stork. Wood storks generally feed on smaller fish within water less than 12 inches deep. Because these birds capture their prey by grope-feeding or tacto-location, the restored marshes within a site which affords little to no wading bird habitat will create a large acreage of feeding habitat for this protected species.

6.9 Cultural Resources

Brockington & Associates completed a phase I archeological and cultural resources survey within the mitigation bank. As indicated in the Executive Summary, the proposed activities associated with restoration of tidal marshes and development of the proposed mitigation bank will not impact any archeological or cultural resources. A copy of the report and additional correspondence has been provided to the USACE and State Historic Preservation Office (Appendix I). In a letter dated 24 August 2010, SHPO concurred with the findings and no affect determination.

7.0 WATER QUALITY

The presence of tidal marsh vegetation assists in wave energy reduction which helps prevent shoreline erosion. This energy reduction causes tidal marsh areas to trap sediment as flow velocity decreases. This sediment accumulation contributes to the long-term maintenance and development of tidal wetlands.

Tidal wetlands reduce the velocity of runoff. This reduction in stormwater runoff creates a natural filter system where the runoff carries less particulate

material and is less turbid.

Tidal marshes and salt marshes contribute to coastal water quality by removing nutrients such as nitrogen. Research and experimental addition of nutrients has shown retention of over 90% of added nitrogen and phosphorus. It is the marshes ability to retain many of the nutrients that makes these wetlands so productive. Tidal wetland productivity is stimulated by retention of nitrogen thru the increase in productivity by herbivores and detritivores.

In addition, tidal wetland sediments filter and accumulate heavy metals which adsorb onto clays, organics, and precipitates in the sediments. Salt marsh vegetation stabilizes sediments resulting in the deposition of heavy metal-sulfide complexes. The tidal marsh herbaceous vegetation sequester these metals in the plant tissue. The result is a heavy metal sink.

While these water quality benefits are present in natural marshes, the existing impoundment cannot provide these functions and values because tidal flows are prohibited. Conversely, water quality within the impoundment is often problematic when considering pH and dissolved oxygen. Restoration of the natural tidal prism will provide an overall improvement in water quality.

8.0 AQUATIC HABITAT DIVERSITY AND CONNECTIVITY

In an undisturbed condition, functions associated with tidal marsh systems include nutrient and organic matter production and transport, nutrient and contaminant removal, reduction of wave energy during storms, flood water storage, and sediment trapping. Tidal wetland habitats also consist of essential fish habitat and provide habitats necessary to support larval and juvenile fish and invertebrate species. In addition, these areas are used for spawning by adult fish and invertebrate species. Tidal wetlands provide feeding and nesting area for a wide variety of waterfowl and wading birds.

Tidal marshes are some of the most productive ecosystems on Earth and provide much of the organic matter and nutrients creating the foundation of coastal and estuarine food web. These wetlands create and release a constant supply of detritus promoting the secondary production of finfish, shellfish, crustaceans, and birds.

In addition to vegetated areas, mudflats are also an integral part of a tidal system. These areas provide habitat for algal communities that provide a food source for snails and benthic organisms. In addition, these bacterial communities aid in the breakdown of organics.

Tidal marsh ecosystems can support an array of functions that provide ecological services to native flora and fauna, other habitats, and also economic services to human beings.

The proposed project will restore and enhance essential fish habitat which has been completely altered and is fully impaired by past land management activities including dike construction and maintenance, hydrologic modification, regulation and maintenance, and vegetation alteration and maintenance. This project includes restoration and enhancement of tidal marsh habitat diversity and connectivity.

9.0 MAPS, FIGURES, PHOTOGRAPHS, & ATTACHMENTS

Each of the maps, figures and photographs are provided in the Appendices associated with this BI.

9.1 VICINITY MAP

See Figure 1

9.2 US GEOLOGICAL SURVEY MAP

See Figure 2

9.3 HUC MAP

See Figure 3

9.4 SERVICE AREA MAP

See Figure 4

9.5 HABITAT MAP

See Figure 5

9.6 DIKE LOCATION MAP

See Figure 6

9.7 NWI

See Figure 7

9.8 IMPOUNDMENT CELL MAP
See Figure 8

9.9 NRCS SOILS MAP
See Figure 9

9.10 COUNTY ROAD MAP
See Figure 10

9.11 AERIAL PHOTOGRAPH
See Figure 11

9.12 MITIGATION ACTIVITES MAP
See Figure 12, Figure 13 & Figure 14

9.13 PROPERTY PLAT
See Appendix B

9.14 THREATENED & ENDANGERED SPECIES MAP
See Appendix H

9.15 CULTURAL RESOURCES
See attached Phase I Cultural Resources Survey Report of Findings (Appendix I)

9.16 SITE PHOTOGRAPHS
See Appendix J

9.17 COPY OF DEED
See Appendix K

9.18 COPIES OF ALL DEEDS TO SECURE DEBT
Not applicable.

9.19 COPIES OF ALL RECORDED EASEMENTS
See Appendix B

9.20 OUTSTANDING THIRD PARTY RIGHTS
No outstanding third party rights are associated with the mitigation site.

10.0 BANK OBJECTIVES
The overall goal of this mitigation project is to restore and sustain the physical, chemical and biological characteristics of a tidal estuarine wetland system. These variables will be restored by removing obstructions (rice box/water control structure), restoring the natural tidal prism and restoring the natural herbaceous vegetation composition typically associated with tidal wetlands within the Savannah River corridor.

11.0 PROPOSED MITIGATION PLAN
The following provides a description of the proposed mitigation plan.

11.1 Description of Future Resources
The project will produce restored and enhanced tidal wetlands and waters and preserved upland buffer. All of the improved resources will provide an ecological benefit to Savannah River.

11.2 Probability of Success
The wetland mitigation proposal is physically and technically feasible. Since no changes in topography are required and because the hydrology functions naturally, the proposed mitigation activities could not have a higher probability for success. One of the primary reasons that mitigation banking is proposed by the site owner is the proposed mitigation activities can be accomplished easily and no management of the mitigation site will be required following completion of the project.

A. Ecological Suitability
The project site consists of tidal marsh associated with the Savannah River which has been altered by historic land management practices. Vegetative impacts included conversion of tidal wetlands to non-tidal and in most cases non-wetland freshwater habitat. Due to the current condition of the site and historic impacts, this site provides outstanding mitigation opportunities within a riverine wetland system. Since the site was historically marsh and will be marsh following restoration, the site could not be more ecologically suitable.

B. Resource Functions & Site Benefits
In the past, tidal marshes were viewed as offering little value. In more recent years, tidal marshes have been determined to be one of the most biologically productive habitats on earth and comparable in productivity to rainforests. This is partly due to the daily tidal flushing and exchange which provides nutrients.

Tidal marshes provide protection against severe weather, slow shoreline erosion, and filter pollutants before they enter oceans and estuaries, either by settling of sediments or

microbial and plant removal of nutrients and other substances.

While areas of tidal marshes have been converted to agricultural land and for urban development, the natural resource regulations and environmental community place the highest level of importance on the resources which results in the highest level of protection.

The proposed project will restore many resource functions lost by the site conversion. The site will also provide a variety of benefits including the following:

- As of October 2010 no saltwater or tidal wetland mitigation credits were available within South Carolina. For this reason, a mitigation bank is needed.

- The site was selected as a mitigation bank because it affords outstanding tidal marsh restoration located on a 303(d) stream (Appendix L). The proposed restoration activities will restore connectivity between the Savannah River and restored marsh. While relatively small when considering the overall size of the watershed, the restoration activities will provide improvements in water quality variables including but not limited to DO, pH, and BOD.

- The site is preferred for mitigation because of its location on the Savannah River (major river corridor), because it is located in a watershed where a large number of properties have been protected, and because it is a neighboring tract to the Savannah Wildlife Refuge.

- Non-native invasive species including Chinese tallow tree, Chinese privet and chinaberry dominate the landscape within this tract. State and federal agencies in the southeast are spending millions of dollars funding control of invasive species including tallow tree. The project will not just control but eradicate a large acreage of invasive species thru restoration of natural processes.

- Long term maintenance & management requirements or concerns are non-existent. Once restored, the tract will be marsh. This is clear and apparent from adjacent parcels which were historically impoundment and now are functioning tidal marsh.

- There is no mitigation proposal that could have a higher probability for success. Coastal South Carolina and Coastal Georgia contain thousands of acres of functioning marsh which historically consisted of management impoundment. These areas have been restored for many reasons and are fully functional and productive habitats today. These functioning marshlands demonstrate that the project cannot be anything but a success.

C. Impairment Statement

The site does not contain any litigation, zoning or other legal impairment that will affect the mitigation bank. SCMG is legally responsible for compensatory mitigation requirements once credits are secured from the bank. The sponsor will comply with standard default and closure provisions.

11.3 Baseline Study Findings & Functional Assessment

A baseline study was completed within the project site from December 2009 through March 2010. Tasks completed and data collected during the baseline monitoring include the following:

- Limited Topographic Survey
- Threatened & Endangered Species Survey
- Wildlife Survey
- Hydrology Monitoring
- Vegetative Assessment
- Macro-Invertebrate Survey
- Fish Survey
- Cultural Resources Survey

The results of the baseline data and functional assessment concludes and confirms that the mitigation site is in no way tidally influenced and is not functioning as a natural tidal marsh system. The most impressive indicator of impairment was well data documenting the current hydrology. During

one of the wettest winters on record, ground water wells installed within the maintained fields recorded ground water elevations as great as 17 inches below the surface. While multiple habitats are currently present to maximize the recreational value of the property (e.g. fields for dove, shrub scrub for deer and hog bedding area, and flooded area for ducks), the hydrology data demonstrates that the entire tract can be completely drained if desired.

In addition to the baseline surveys, the sponsor has contracted with Dr. Bruce Pruitt of Nutter & Associates. Dr. Pruitt completed a detailed assessment and model of current and future predicted hydrologic conditions within the site. The goal of the study was to determine whether hydrologic restoration of the mitigation bank site would occur by introducing semi-diurnal tides to the site. The objectives were five-fold: 1) determine inundation zones on the mitigation bank, relative to mean sea level; 2) conduct a long-term tidal study over several tidal amplitudes and conditions including NEAP (near even as possible), average, and spring tides; 3) determine the magnitude and timing of flood and ebb tidal cycles; 4) conduct a pilot tidal exchange study on a representative tidal gate; and 5) make recommendations regarding a staged approach to hydrologic restoration.

Based on the results of the long-term tidal study and pilot tidal study, GSE on the restoration site below 3 feet MSL (NAVD88) will be flooded twice daily on semi-diurnal lunar tides. Once the hydrologic restoration is complete, dramatic improvements in surface water quality will occur. In addition, estuarine conditions will be established conducive to saltmarsh vegetation production. Consequently, low to medium saltmarsh (*Spartina/Juncus* marsh and associated species) will be established on the majority of the restoration site. In addition, ground surface areas greater than 3 feet above MSL will be flooded during most spring tide events, thus, providing ecotones and habitat for high tidal marsh species (e.g., *Spartina cynosuroides*) and preclusion of exotic and invasive species.

As indicated in the summary and recommendations, the restoration site has a high potential for success in regards to establishment of a fully functional tidal marsh. Tidal dynamism in concert the appropriate ground surface elevation and evenness and local access to surface waters influenced by regular lunar tides ensures success.

11.4 Mitigation Work Plan

The goal of the proposed mitigation plan is to restore natural hydrology and vegetation to the site. This will be accomplished by removing large sections of the existing dikes. Installation of openings within the earthen structures will reestablish the tide water connectivity, restore the degree, duration and periodicity of saturation and inundation and will re-introduce native and natural tidal marsh vegetation.

A. Hydrologic Restoration:

As depicted on Figure 12 the project will include the removal of the primary dike located on the southern and eastern end of the project, breaching of the primary dike on the northern portion of the property and structure removal and dike breaching within the interior portion of the restoration area.

Primary/Exterior Dike (Unit 6) (South): Approximately 2,300 linear feet of primary dike will be removed on the southern end of the restoration area. The dike will be excavated and the material placed into the adjacent canal system within the interior of the site. Complete removal of this section of dike will fully restore connectivity between the restoration area and preservation/reference marsh. Final elevations once the dike is removed will be +/- 0' MSL to 1' MSL and match the adjacent ground elevations within the site. In addition, two additional breaches will be installed in this dike on the eastern side providing connectivity between the tidal creek located on the east of the property and west of Highway 17.

Primary/Exterior Dike (Unit 6) (North): Within 1 year of approval by the Savannah District USACE (easement holder) or concurrent with the overall mitigation bank construction activities (whichever occurs later), a minimum of two breaches will be installed within the northern dike at the locations depicted on Figure 12. This section of canal is tidally influenced and will complete the hydrologic connectivity through the entire tract from south to north. In addition, any freshwater intrusion into the mitigation site and/or saltwater intrusion into

the freshwater canal will be prohibited by permanently removing the existing water control structures and filling the dike. Note that the timing of this action is dictated by the Savannah District. While it is the sponsors intends to complete this portion of the project, this action is not tied to any other construction schedule, performance standard or the credit release schedule for the project.

Interior Dikes (Unit 7): All lesser dikes within the restoration area are lower in elevation than the primary dike system. The hydrology model prepared by Dr. Bruce Pruitt indicates that these areas will be inundated on a regular basis with semi-diurnal tide events. All existing structures present within the lesser dikes that have been installed for interior water freshwater management will likely be removed and the interior dikes will be breached accordingly and as necessary.

In addition, as recommended by Dr. Pruitt, the following sequence of restoration design steps will be implemented during the construction phase to maximize tidal expansion and timing across the restoration site.

1. Remove all interior structures.

2. Remove exterior dike on the southern and eastern portion of the property.

3. As an integral part of the monitoring and contingency plan, apply adaptive management, as necessary, to ensure maximum tidal exchange between the canals and the restoration site. This may include adjusting the size of the openings and/or constructing additional openings at appropriate locations where structure removal occurs.

B. Vegetative Restoration:

As with any tidal marsh system, the source of the native vegetation will be the adjacent tidal marsh. The adjacent marshes will act as abundant and ideal seed source for the vegetative restoration component.

Vegetative restoration activities will include removal of overstory trees and larger shrub vegetation. Areas where vegetation removal will occur include forested wetland (unit 2), shrub/scrub wetland (Unit 3), along the dikes (Units 6 & 7), along the canals and ditches (unit 8) and adjacent to the open water pond (unit 9) & 8) with a bulldozer, trackhoe, feller buncher, gyro tract, and/or manually. If necessary, debris will be piled and burned. Following removal of overstory species and dike removal, vegetative restoration will occur naturally and began immediately. The establishment of the desired plant community will occur naturally as existing overstory vegetation is removed, shrub and herbaceous vegetation is naturally eradicated tidal water intrusion and saltmarsh vegetation regenerates. The tidal exchange and adjacent saltmarsh will provided provide the necessary seed source for this restoration process.

The impoundment area contains freshwater herbaceous, shrub and tree species. Following breaching of the dike, the natural daily tide exchange has provided the preferred seed source for desired species including saltmarsh cordgrass, big cordgrass and black needle rush. As indicated in the adaptive management plan, if monitoring determines that the project is not meeting the vegetative success criteria, seeding or planting efforts will be implemented.

The following table provides a summary of habitats to be restored, enhanced and preserved as part of the mitigation bank work plan. Figure 13 also depicts the location and approximate limits of each mitigation activity.

Table 6.

HABITAT TYPE	AREA (AC.)
UPLAND/HAMMOCKS	3.84
OPEN WATER POND	31.47
TIDAL CREEK AND SHALLOW WATER ENHANCEMENT	9.32
TIDAL MARSH RESTORATION	446.81
TIDAL MARSH PRESERVATION	189.46
TIDAL CREEK PRESERVATION	13.2
TOTAL	**694.1**

11.5 Construction Methods

The project included breaching of the existing exterior and interior dikes. Standard construction methods and equipment will be used during the construction phase of the project. Other than activities above, no other land disturbance will be required (i.e. site prep, grading, etc.).

11.6 Grading Plan

The proposed project does not require any grading other than structure and dike removal. Beyond the dikes, elevations within the site vary less than one foot. Any material removed from the dike will be placed within the adjacent canal from which the material was originally excavated. Elevations within the footprint of the dike and canal will be excavated or filled to match the existing and adjacent ground elevations.

11.7 Soil Management and Erosion Control

The construction phase of the project will comply with all state and local sedimentation and erosion control requirements. All areas disturbed during the implementation of the mitigation project will be stabilized to prevent erosion and degradation of the adjacent wetlands and waters. Any additional construction efforts associated with adaptive management will utilize the same.

11.8 Timing & Sequence

This section provides a brief description of the schedule proposed for implementation and physical work associated with mitigation activities. No credits will be released prior to closing on the conservation easement. Implementation of the restoration and enhancement activities shall occur following closing of the conservation easement and within one year of the first credit sale. It is anticipated that the construction timing will be outlined in the banking instrument. A general schedule includes:

Conservation Easement: Within 6 months of BI approval the sponsor will close on the conservation easement. While it is likely that this activity will occur immediately following approval, a 6 month period was assigned to allow adequate time for preparation of documents, title work, review of draft documents by OC, closing, etc.

Breaching of Dikes: Following approval of the bank and within one year of the first credit sale, the sponsor will begin construction activities associated with dike breaching and structure removal.

Construction Report: Within 6 months of completion of construction and mitigation activities will prepare and submit a complete report documenting the construction activities. This report will include all final surveys, as-builts, photographs documenting construction phase, etc.

Annual Monitoring: Monitoring will begin within the first year following completion of the construction activities and will continue annually for seven years thereafter.

Fee Title Transfer to Conservancy: The sponsor has been working with an approved land trust regarding fee title transfer of the property. While the timeframe for conveyance has not been determined, if the transfer occurs, it is likely to occur prior to or within six months of completion of the seven year monitoring and determination of success.

Note that in the event of adverse weather conditions, the timing of the restoration and enhancement plan could be extended until such time equipment could enter the site and complete the work. It is also understood that release of credits are contingent upon completion of specific activities.

11.9 Invasive Species Control

Non-native invasive species are common within the mitigation site. Most forested areas are dominated in the overstory by Chinese Tallow Tree, Chinaberry and in some areas, Chinese Privet in the understory. State and federal agencies in the southeast are spending millions of dollars funding control of invasives and specifically species present within the project area. With most mitigation projects eradication of these species is not feasible and the only goal is to achieve some level of control. With the proposed mitigation bank, eradication is possible and will occur. This is easily predicted by the absence of invasive species within the functioning marsh immediately adjacent to and surrounding the project site.

Most invasive species control requires chemical

application and treatments. The proposed mitigation plan and tidal marsh restoration efforts will not just control but eradicate these invasive species using 100% natural processes. There is no other invasive species control or eradication plan that could be better.

Additional measures will include implementing measures to prevent or minimize the spread of invasive species as appropriate for the time of the year. These measures include removal and disposal of vegetative parts in the soil that may reproduce by root raking prior to moving the soil, burning on site any such parts and aboveground parts that bear fruit, controlling or eradicating infestations prior to construction, and cleaning of vehicles and other equipment prior to leaving the infested site.

11.10 Nuisance Animal Control

No habitats which could support nuisance animals will be created as part of the restoration projects. Thus, no animal control will be required.

12.0 BANK CREDIT VALUE AND CALCULATION METHODOLOGY

Appendix O of this report includes worksheets for calculating mitigation credits in the proposed mitigation bank. Mitigation credit value of the proposed bank was calculated in accordance with the Department of the Army Charleston District Corps of Engineers Compensatory Mitigation Standard Operating Procedure dated 19 September 2002. Factors were determined using standard recommendations and definitions found in the SOP and the boundary survey for the subject site. It is important to note that final habitat acreages will be survey and provided in the construction report provided to the IRT following completion of the restoration activities. If revisions to the SOP calculations are required as a result of the as-built survey, the SOP revisions will also be provided in the construction report.

This mitigation project will generate a total of 1960.7-2415.5 mitigation credits including 88-116.5 tidal waters enhancement credits, 1,683.2-1,995.9 tidal wetlands/waters and 189.46-303.1 tidal wetlands/waters preservation mitigation credits.

A summary of each habitat type and credit value is provided in Table 7, Table 8, & Table 9.

Table 7.

Habitat	Mitigation Action	Acreage	Credit Generation
Tidal Marsh	Restoration/Enhancement (impoundment)	251.45	1056.1-1232.1
Tidal Marsh	Restoration/Enhancement (impoundment)	194.06	621.0 - 756.8
Tidal Marsh	Restoration (dike removal & canal fill)	1.3	6.1-7.0
Tidal Creek & Shallow Water	Enhancement	9.32	34.5-41.0
Tidal Waters (Open Water Pond)	Enhancement	31.47	53.5 - 75.5
Upland Hammock	Preservation	3.84	0.0
Tidal Marsh	Preservation	189.46	189.5-303.1
Tidal Creek	Preservation	13.2	0.0
	TOTAL	**694.1**	**1960.7-2415.5**

Preliminary credit numbers were generated by calculations in the following worksheets and by applying the factors described in the following text.

TABLE 8.

Proposed Restoration or Enhancement Mitigation Sample Worksheet

Factor	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Net Improvement	3.5	2.5	4.0	3.0	1.0	0.1
Control	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6
Temporal Lag	0	0	0	0.0	0.0	0.0
Credit Schedule	0.0	0	0.0	0.0	0.0	0.0
Kind	0.4	0.4	0.4	0.4	0.4	0.0
Location	-0.1-0.4	-0.1 - 0.4	-0.1-0.4	-0.1-0.4	-0.1-0.4	-0.1-0.4
Sum of m Factors	M_1= 4.2-4.9	M_1= 3.2-3.9	M_2= 4.7-5.4	M_3= 3.7-4.4	M_3= 3.7-4.4	M_4= 0.4-1.1
Mitigation Area	A_1= 251.45	A_1= 194.06	A_2= 1.3	A_3=9.32	A_3=31.47	A_4= 3.84
MXA=	1056.1-1232.1	621.0 - 756.8	6.1-7.0	34.5-41.0	53.5 - 75.5	**0.0
Total Stream Restoration/Enhancement Credits=∑∑(M··A)=						**1771.2 – 2112.4**

****Hammocks will be preserved but will not generate any credit.**

Restoration & Upland Buffer Areas

Area 1 Forested Upland (0.62 Acre of Unit 1), Forested Wetland (82.15 Acres of Unit 2), Mowed Field (81.01 Acres of Unit 4), Flooded Field (62.06 Acres of Unit 5), Interior Dike (25.61 Acres of Unit 6)
Area 2 Shrub Scrub (194.06 Acres of Unit 3)
Area 3 Exterior Dike (0.65 Acres of Unit 7), Interior Canal (0.65 Acres of Unit 8)
Area 4 Interal Canals/Ditches (9.32 Acres of Unit 8)
Area 5 Open Water Pond (31.47 Acres of Unit 9)
Area 6 Forested Upland (1.64 Acres of Unit 1), Exterior Dike (2.20 Acres of Unit 7)

Proposed Preservation Mitigation Sample Worksheet

Factor	Area 1	Area 2
Priority Category	0.4	0.4
Existing Condition	0.1	0.1
Degree of Threat	-0.1	-0.1
Control	0.4-0.6	0.4-0.6
Kind	0.3	0.3
Location	-0.1-0.3	-0.1-0.3
Sum of m Factors	M_1 = 1.0-1.6	M_2 = 1.0-1.6
Mitigation Area	A_1 = 189.46	A_2 =13.2
M x A =	189.5-303.1	**0.0
Total Required Credits = ∑∑ (M··A) =		**189.5-303.1**

****Existing tidal creeks within preservation area will be preserved but will not generate any credit.**

Preservation Areas

Area 1 Tidal Marsh (189.5 Acres of Unit 10)
Area 2 Tidal Waters (13.2 Acres of Unit 11)

Total Mitigation Credits Generated By Project = 1960.7-2415.5

Location: Primary Service Area (Zone 1), Secondary Service Area (Zone 3), Tertiary Service Area (Zone 5)

12.1 Buffer Enhancement Mitigation Credit Assignment

The proposed project will include the preservation of upland area and hammocks within the mitigation bank site. In 2003-2004, South Carolina Department of Natural Resources -Marine Resources Division conducted an assessment of coastal hammocks within South Carolina. The study was conducted to examine the ecological importance of hammocks. The survey observations show that these sensitive and ecologically important areas are favorable habitats for a diverse range of fauna.

According to the study, there are approximately 3,467 coastal islands, not including the larger "Sea Islands" such as Hilton Head. Of these islands, 53.7% are less than one acre, 81.5% are less than five acres, and 88.0% are less than ten acres. Although ownership is often difficult to determine, it is estimated that only about 27.3% of coastal marsh hammocks are protected.

Coastal hammocks are unique ecosystems with greater species diversity than was expected for both flora and fauna. Hundreds of plant species were found in at least 24 different plant communities. The hammocks provide refuges and perhaps essential habitats for reptiles, birds and mammals. Migratory birds use hammocks as stopover sites where they rest and refuel. Important species such as the Painted Buntings utilize hammocks for nesting, feeding, and rearing of young, and wading birds rest on remote hammocks as they wait for the tide to drop. Nearctic-Neotropical migratory land birds breed primarily in North America north of Mexico and winter primarily from Mexico into more tropical areas of the Caribbean and Central and South America. The Nearctic-Neotropical group includes many species that breed and are resident in South Carolina during spring and summer, including Eastern Painted Bunting, Indigo Bunting, Summer Tanager, Orchard Oriole, Yellow-throated Warbler and Prairie Warbler. These hammocks are also for resting, especially during high tides, serve as roosting sites, provide desirable nesting areas, and adjacent tidal wetlands. Species commonly observed include Great Blue Heron, Great Egret, Snowy Egret, Black-crowned Night-heron, Yellow-crowned Night-heron and Green Heron. The federally endangered Wood Stork has also been shown to extensively use isolated hammock islands as resting and roosting sites. Birds of prey, marsh birds, shorebirds and resident, non-migratory land birds also inhabit coastal hammock islands. Species occurrences documented to use upland marsh hammocks include Bald Eagle, Great Horned Owl and Osprey. Many of these isolated island hammocks likely provide a relatively isolated refuge for specific species. While the number of species generally increase with the size of the upland hammock, edge habitat is one of the most important contributing factors. Given that edge habitat is very important to birds, and that small islands are essentially all edge, the SCDNR study documents that these hammocks may be particularly important habitats. As development continues to alter the traditional habitat along the marshlands, many bird species have likely sought isolated habitat on these hammocks.

In addition to bird and reptile species, mammals are very common on hammocks, utilizing the habitats for nesting, feeding, mating and resting. According to SCDNR, these isolated habitats probably provide a degree of security that is lacking on the mainland.

The report concludes by providing management suggestions for marsh hammocks. As it relates to the small isolated hammocks within Clydesdale, the report recommends that "Islands should not be exempted from protection based upon size; Size alone should not be used to characterize the relative biological importance of marsh hammocks".

Due to the ecological benefit of marsh hammocks, the proposed protection of the remaining upland hammocks is beneficial to the success of the overall project. While the project will result in the perpetual preservation of the upland hammocks, no mitigation credit will be generated.

12.2 Restoration & Enhancement Mitigation Credit Assignment

The proposed restoration and enhancement activities mitigation value was calculated in distinct categories including tidal marsh restoration, tidal marsh preservation, tidal creek/shallow waters restoration, tidal creek/shallow waters preservation, tidal open waters enhancement, and upland hammock preservation.

Net Improvement: The information gathered from

baseline studies and assessments provided data necessary to determine the value for "net improvement". As outlined in the draft prospectus, prospectus, baseline monitoring report and any published studies regarding tidal marshes and restoration thereof, the existing impoundment areas are considered fully impaired and non-natural communities. While the mitigation site in its current condition provides habitat for a variety of species (plant, mammal, reptile, bird, etc.), the site is 100% impounded, managed and dominated by a variety of vegetation species not present within reference areas or other naturally functioning tidal marsh areas of South Carolina. The hydrology has been 100% altered within the impoundment area through the installation of dikes and ditches and no tidal influence occurs.

The Charleston District SOP categorizes the NI as follows:

- "*Examples of low NI actions include*: the placement of upland buffers, wildlife habitat enhancement (prescribed burning, water control manipulation), exotic plant removal and/or management, and erosion and sediment control." These activities would not be applicable to the open water habitats within the proposed mitigation bank.

- *"Examples of moderate NI actions include*: planting cleared wetlands to speed succession and increase species diversity, planting upland buffers, and hydrological enhancement (breaching causeways or dikes, increasing number and/or size of culverts in causeways, plugging ditches in impaired wetlands)." The proposed restoration activities include hydrological enhancement and restoration of tidal flows to the lake. These activities could be classified as moderate NI.

- *"Examples of high NI actions include*: fill removal, restoration of native wetland plant communities in converted wetlands, and hydrological restoration (complete causeway or dike removal, plugging and/or removal of ditches in effectively drained wetlands, restoration of braided creek system and natural sheet flows)." The proposed restoration activities at the lake include complete causeway/dike removal to restore natural tidal sheet flows. The enhancement activities could be classified as high NI.

In addition to the Charleston District NI classifications, the ecological value of the tidal creeks and open water habitat are critical to the overall mitigation bank success. All natural tidal wetlands contain a variety of habitats including vegetated marsh, open water, mud flats, etc. This area currently consists of an isolated freshwater feature. No inflow or tidal influence is allowed. Once the dike is removed the lake will have tidal influence creating a tidal creek. Initially with the depth of the creek and transition of this lake from fresh to brackish water, use of this habitat will be limited. But with time, tidal influence will naturally create a suitable tidal water habitat for many species of fish and crustaceans through their life cycles. This area will become a nursery for fry and fingerling fish species as well as macro invertebrate species which naturally thrive in tidal water habitats. A summary outlining a few of the ecological benefits discussed above include the following.

- Approximately 10% of the mitigation bank will consist of open water tidal creeks and tributaries which is consistent with estuarine habitats in the Southeast

- following restoration activities, the open water features (both canals and lake) will become tidal tributaries and serve as conduits for tide water inflow critical to the hydrologic restoration and water quality success of the project

- this enhanced tidal creek habitat is important to estuarine food webs as nekton occupy residual waters in tidal channels within or adjacent to the marsh

- nonresident nekton tend not to remain in shallow microhabitats and retreat to deeper water on most ebb tides

- tidal waters linking the marsh drainage system and the sub-tidal refuge constitute important corridors between the two

habitats

- the enhanced tidal water habitats are important nursery areas for post-larval and juvenile fish and shellfish

Considering the standards and functional values discussed above and because this project will result in complete restoration of natural tidal marsh species composition and the tidal prism (tide exchange twice daily), a net improvement factor of 3.5 (excellent restoration), was applied to all fields and tallow forest habitat and a NI factor of 2.5 was applied to impoundment areas consisting of shrub scrub habitat which continues to exhibit some wetland function but remains highly disturbed and non-tidal. A NI factor of 3.0 was applied to the larger canals and ditches within the impoundment that will transition into shallow water and tidal creek habitat once restoration activities occur. A NI factor of 1.0 was applied to the lake area which will transition into open water habitat once the restoration activities occur. These NI factors were applied following review the project by and at the recommendations the USACE and OCRM using the Charleston District SOP.

Control: A conservation easement will be granted to a third party. A factor of 0.4 was applied. If, at any time, the sponsor transfers title to a qualified, experienced non-profit conservation organization or government agency, the sponsor reserves the right to gain an additional 0.2 credits/acre within the mitigation bank as afforded by the current SOP. Potential credits associated with fee title transfer will be withheld until the actual property transfer occurs.

Temporal Lag: As indicated in the SOP "Temporal Lag is a factor designed to compensate for the temporal loss of wetland or aquatic area functions due to a time lag in the ability of the enhanced, restored or created mitigation area to fully replace functions lost at the impact site." Different systems will require different time to reach levels of functional capacity level with the impact site. For example, if a mature bottomland hardwood wetland is impacted, it may take up to 60 years to replace all functions including structural habitat complexity, whereas replacement of functions in an emergent marsh situation may take much less time (e.g. 5 to 15 years). The proposed project includes restoration of emergent marsh. Thus, a factor of -0.2 was applied because replacement of functions requires much less time within emergent marsh than other habitats.

Credit Schedule: The proposed bank will adhere to Schedule 5. More than 30% of the total credits are released prior to final determination of success. A factor of 0.0 was applied.

Kind: The project will provide compensatory mitigation for tidal marsh impacts. A factor of 0.4 was applied as required by the SOP.

Location: A sliding scale of -0.1 to 0.4 was applied to the preliminary credit calculations. Following completion of the banking instrument and service area assigned by the IRT, each credit sale will be calculated accordingly.

12.3 Preservation Mitigation Credit Assignment

A total of 1.0-1.6 credits/acre is associated with the proposed tidal wetland/waters preservation area. The following provides a detail of each credit factor justification of assignment and value.

Priority Category: As defined by the SOP, "primary priority areas are those which provide important contributions to biodiversity on an ecosystem scale, or which provide high levels of functions contributing to landscape or human values." Designated Primary Priority Areas include:

- National Estuarine Sanctuaries
- Wild and Scenic Rivers
- Designated Shellfish Grounds
- Outstanding Resource Waters
- Essential Fish Habitat
- Waters on the 303(d) list
- Trout waters
- All tidal waters
- Anadromous fish spawning waters
- State Heritage Trust Preserves
- National Wildlife Refuges
- Waters officially designated by State or Federal agencies as high priority areas
- Old growth climax communities that have unique habitat structural complexity likely to support rare communities of plants or animals

The proposed preservation area consists of 194.06 acres of tidal marsh located adjacent to the Savannah River. This area is identified by the SOP as primary priority areas because it is essential fish habitat and tidal waters. In addition, this parcel is located near the National Wildlife Refuge and is located within Waters on the 303(d) list. In addition, application of the HGM provided in Appendix M document that the preservation area is fully functional. Thus, a factor of 0.4 was applied.

Existing Condition:
The preservation area falls within the category of "Fully functional" because the typical suite of functions attributed to the system type are functioning naturally. Existing disturbances do not significantly alter important functions. For this reason a factor of 0.1 was applied.

Degree of Threat: The degree of threat for the preservation area is low. Because the preservation area consists of tidal marsh and land use changes or habitat alterations are not likely to occur or be authorized by the resource agencies, a factor of -0.1 was applied.

Control: A conservation easement will be granted to a third party. A factor of 0.4 was applied. If, at any time, the sponsor transfers title to a qualified, experienced non-profit conservation organization or government agency, the sponsor reserves the right to gain an additional 0.2 credits/acre within the mitigation bank as afforded by the current SOP. Potential credits associated with fee title transfer will be withheld until the actual property transfer occurs.

Kind: The project will provide compensatory mitigation for tidal marsh impacts. A factor of 0.4 was applied as required by the SOP.

Location: A sliding scale of -0.1 to 0.4 was applied to the preliminary credit calculations. Following completion of the banking instrument and service area assigned by the IRT, each credit sale will be calculated accordingly.

12.4 Mitigation Credit Summary:

In summary, this mitigation project will generate a total of 1960.7-2415.5 mitigation credits including 88-116.5 tidal waters enhancement credits, 1,683.2-1,995.9 tidal wetlands/waters and 189.46-303.1 tidal wetlands/waters preservation mitigation credits. This site will provide compensatory mitigation of projects which impact tidal wetlands and waters of similar kind (brackish/saltwater tidal marsh, brackish/saltwater tidal waters). It should be noted that the sponsor also reserves the right to request permission from the IRT to mitigate for any additional habitats that develop on the mitigation bank site and are documented in annual monitoring reports.

13.0 Credit Release Schedule

The proposed credit schedule was developed using page 21 of 73 of the Charleston District Standard Operating Procedure for Compensatory Mitigation. Please note that the sponsor has not determined the final release schedule. Schedule 5 has been applied to the project. Only 15% of the total credits are released upon completion of site protection and 20% of the total credits are held until final determination of success.

- **Release One (1)**: 15% Upon approval of the BI and closing of the conservation easement.
- **Release Two (2)**: 15% Following removal of primary dike, removal of structures, restoration of tidal flows and submittal of the construction completion report.
- **Release Three (3)**: 10% Upon completion of first year of mitigation monitoring and submittal of annual monitoring report.
- **Release Four (4)**: 15% Upon completion of third year of mitigation monitoring and submittal of annual monitoring report.
- **Release Five (5)**: 10% Upon completion of fifth year of mitigation monitoring and submittal of annual monitoring report.
- **Release Six (6)**: 15% Upon completion of sixth year of mitigation monitoring and submittal of annual monitoring report.
- **Release Seven (7)**: 20% Upon completion of seventh year of monitoring and final determination of success.

13.1 Accounting Procedures

The sponsor will maintain a ledger to account for all credit transactions. Worksheets will be provided to the USACE and other appropriate agencies for each transaction in the bank. Each completed accounting

worksheet will include a permit identification number, mitigation credits, and the balance of credits within the bank after the transaction.
The sponsor will compile an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended). The ledger report will be submitted to the USACE. The ledger report is part of the administrative record for the mitigation bank. The USACE will make the ledger report available to the public and upon IRT request. Model mitigation credit conveyance letters and accounting ledger are included in Appendix P of this document.

14.0 MONITORING PLAN AND PERFORMANCE CRITERIA

Monitoring criteria will include collection of data to document that the restored tidal areas are functioning as the reference areas. This monitoring plan will assess abiotic, and biotic factors. Abiotic variables include: development of hydric soil conditions; and, hydrologic regime biotic variables include: vegetation growth and survival; tidal wetland vegetative structure; and, fish and macro-invertebrate richness and abundance.

14.1 Hydrologic Monitoring

Hydrology monitoring will be conducted using the 13 automated water pressure recorders wells installed throughout the mitigation area and reference sites. Reference sites consist of three stations located immediately outside of the impoundment and two stations within Murray Hill Canal.

14.1.1 Type of Well/Frequency/Duration of Data Collection

The Data Logger's built-in pressure sensor is accurate to +/- 0.1% of the range. The sensor compensates for changes in atmospheric pressure. Pressure Water Level Data Loggers can reference any user-defined elevation, positive or negative. Multi-year power is supplied to the Data Logger by four off-the-shelf AA alkaline batteries. Typical battery life is four years. Data is retained in memory in the absence of power. The user communicates with the Data Logger with a PC via serial cable using Infinities PC Transfers software. All functions of the Data Logger are accessible using a PC with Windows 95/98/2K/NT/XP/Vista. Data Loggers can be downloaded using a laptop in the field, or downloaded with the optional handheld data retrieval device.

The hydrologic data has and will continue to be collected using an pressure water level data loggers. Any range is available up to 50 feet of water. The user can set the Data Logger to any time interval between recordings, from 1 recording every second to 1 recording per day or greater. For this project, the wells will be set to read every 15 minutes. Because the site will experience tidal flows twice daily, as indicated above, there will be abundant redundancy not just in the number of monitoring wells but also the data collected from the wells. Thus, downloading data from the wells every quarter should be adequate. If data is lost from one or more wells, this information will be quickly replaced by a month of data which records the tidal exchange twice daily.

14.2 Vegetative Monitoring Plan

Ten sampling plots were established within the site during the baseline monitoring phase. The number and location of plots were established based on elevations and habitat and in an effort to insure accurate baseline data collection as well as provide sufficient data during baseline monitoring.

For post restoration monitoring, two transects have been established on which a one meter plot will be established every 500 feet. In addition, one plot will be installed on an interior dike. A total of 32 one meter plots will be established. Within these plots, tidal wetland vegetation establishment will be documented. Both percent coverage and species composition will be recorded. Annual monitoring within these plots will document the success of the restoration efforts and achievement of performance standards.

The sampling plots will be established within the mitigation site prior to breaching of the dikes. Each of the plots will be established by installing a ten foot section of PVC pipe as a mark for each plot. Vegetative monitoring will be conducted using the methods described above over a seven year period. Monitoring plots will be sampled annually at the end of the growing season (1 August - 15 October) each year. Photographs will also be taken at established

points in the restoration area over the seven year monitoring period to document the vegetation growth changes that occur in the restoration area.

In addition to monitoring of vegetative plots, overall vegetative coverage for the site will be documented by aerial photography.

14.3 Vegetative Monitoring Plot and Hydrology Well Locations

A total of 32 vegetative plots and 14 hydrology sampling stations/wells will be used during the seven year monitoring period. The proposed number and location of plots and wells will be adequate to document the success of the mitigation efforts. Since the entire property was historically marsh and elevations within 99 percent of the property vary less than 1 foot, the number and location of proposed plots will provide a suitable representation of the entire tract. Also note that one well will be installed on an interior dike to document the tidal restoration efforts over the entire site including the interior lesser dikes. Figure 14 depicts the location of each well and plot.

14.4 Water Quality Monitoring

In-situ surface water quality parameters will be documented at each fish & macroinvertebrate sampling location. Variables collected within the restoration site will include salinity, temperature, dissolved oxygen, and pH. Data will be collected during both the fish (1 March and 31 October) and macro invertebrate surveying (1 October and 28 February).

These water quality parameters were monitoring during the pilot tidal study. Prior to opening Gate #2 and introduction of tidal waters, stagnated conditions were observed in the interior canal. The surface water was stained with a brownest-orange discoloration possibly from bacterial activity of the genus *Thiobacillus*. *Thiobacillus* is an obligate aerobic bacterium that utilizes available dissolved oxygen (DO) in the water column and in the process, oxidizes reduced iron (ferrous, Fe^{2+}) to oxidized iron (ferric, Fe^{3+}) and consumes oxygen. As evidenced by an initial DO of less than 2 mg/L prior to flooding, DO was suppressed in the closed canal and did not meet State water quality standards. In contrast, once tidal surface waters were introduced to the site, DO increased dramatically and was maintained above 5 mg/L during most of the pilot study. A corresponding increase in pH, salinity, and temperature representative of tidal riverine conditions (Savannah River) was also observed during the flood cycle.

14.5 Fish Monitoring

Since the large majority of the site is maintained in a drained condition, documenting the transition from one species to another can only be achieved within the lake area. Data from the remainder of the site will document re-introduction of species currently recorded within and known to occur within the reference sites and adjacent tidal marshes.

Fish sampling will be conducted within seven sampling stations including three reference stations and four mitigation site stations. Surveying will be conducted between 1 March and 31 October. After restoration of the site fish sampling will include the seine method. Seines 50ft in length, six feet in height and ¼ inch mesh will be set parallel to shore line (beside a tidal creek) at slack high tide in 1.5 to 6 feet water depth and allowed to fish for between 1.5 to 3.0 hours. The seine sets will be made by anchoring the lead and float lines to a pair of 2 inch diameter PVC pipe that are driven about 1.5 feet into the substrate. As the water drops between 3 to 6 feet, juvenile and adult fishes will be trapped. Species and mass weight and will be documented at each sampling station.

As depicted on Figure 14, sampling stations have been established for collection of fish data.

14.6 Macro Invertebrate Documentation

Macro-invertebrate data collection within seven sampling stations and will be completed between 1 October and 28 February. Data will be collected from sampling stations within the bank site and two reference points.

Sampling procedures included using a standard D-frame dip net with a 0.3 meter width and 500um mesh. Large woody debris, undercut banks/rootwads, leaf packs, and soft sediment/sandy substrate were the habitats targeted when present. The jab and kick techniques were used to collect the macroinvertebrates. A jab consists of thrusting the net into the chosen habitat for a linear distance of 1 meter. A kick consists of

disturbing the substrate upstream of a stationary dip net for a linear distance of 1 meter. Twenty jabs will taken per sample site. All contents of the sample will be preserved in ethanol and returned to the lab for sorting. A map depicting the location of sample points, data collected and recorded, and laboratory results will be provided in the annual monitoring report.

As depicted on Figure 14, sampling stations have been established for collection of macro invertebrate data.

14.7 Sediment Accumulation

Topographic survey data confirms that the site has experienced subsidence as a result of the impoundment management. As indicated by several of the commenting agencies, this subsidence is common for management impoundments. This condition was also recently documented in a monitoring effort completed by the University of Georgia (UGA) on Georgia Department of Transportation managed impoundment restoration project on the Ogeechee River. This project began in 1999 and the proposal was identical to the Clydesdale restoration project. The site consisted of a managed impoundment and restoration activities were limited to installation of three breaches within the dike. While elevations within the site were a minimum of 1 foot lower than adjacent marsh areas, UGA monitoring results documented sediment accumulation rates of 0.9 inches/year to 1.37 inches/year on the Ogeechee River. Similar rates are expected within this site as is demonstrated by the continual dredging of the channel, slips and harbors within this river corridor. In order to document the natural restoration of elevations within the site, sediment accumulation will be recorded for the life of the monitoring period and presented in each annual monitoring report.

14.8 Performance/Success Criteria

The sponsor will utilize the applicable performance standards and success criteria for each segment/phase of the bank site and thoroughly discuss how these criteria will be used to document annual and final success.

14.8.1 Vegetative Performance Criteria

The restoration and enhancement efforts will be considered successful and complete if, at the end of the seven year monitoring program, the vegetation present within each plot is dominated by tidal marsh species including Spartina alternaflora, Juncus roemerianus, and Spartina cynosuroides. Demonstration of success and milestones are provided in Table 9. Both plot coverage and overall site coverage will be documented within the site. The final determination of success will be demonstrated through 90% vegetative coverage of entire site.

14.8.2 Hydrologic Performance Criteria

Hydrology will be deemed successful if the hydrology functions match the reference site for parameters including salinity, degree, duration and periodicity of saturation and inundation. Note as with any tidally influenced system, the time and elevation of surface water will be different for each plot. However, the success of the mitigation efforts will be easily determined by both the daily tide exchange (vertical and horizontal coverage) recorded by the hydrology monitoring wells.

14.8.3 Fish & Macro-Invertebrate Performance Criteria

Fish assemblage and macro-invertebrate restoration will be considered successful if species composition within the mitigation site and reference wetlands are similar and consistent with tidal wetlands and waters of the Savannah River.

14.8.4 Water Quality Performance Criteria

Due to the size of the watershed and the size of the Savannah River, there is little doubt that water quality conditions within the restoration area and within the reference sites will be consistent. In other words, the Savannah River is the source of tide water for the project site and it would be impossible for the sponsor to change the salinity levels or pH within the Savannah River. In addition, salinity levels within tidally influenced estuaries depend greatly on rainfall within the region. For this reason, it would be impossible to predict or produce a target salinity. Thus, our target for water quality variables is directly tied to the reference areas. For this reason, the success criteria will not be dependent upon achieving a specific temperature, pH, DO level, etc. Rather, success will be achieved if water quality samples within the restoration area are similar to those within the adjacent reference areas.

Table 9.

Restoration & Enhancement Area Monitoring Metric & Performance Standards		
Metric/Variable	**Monitoring Year**	**Performance Standards**
Hydrologic Regime	Year 1-7	Restoration of twice daily flood events semi-diurnal lunar tides with typical range from 0 to 3 MSL NAVD 88 and greater on spring high tides
Vegetation Structure	Year 1-7	Species composition and distribution consistent with reference sites including *S. alternaflora, S. cynosuroides , J. roemerianus.*
Vegetation Establishment (1 Meter Monitoring Plots)	Year 2	Coverage Within Plot : 20% vegetated /80% open water & mudflat
	Year 3	Coverage Within Plot : 40% vegetated/60% open water & mudflat
	Year 5	Coverage Within Plot : 60% vegetated/40% open water & mudflat
	Year 6	Coverage Within Plot : 80% vegetated/20% open water & mudflat
	Year 7	Coverage Within Plot : 100% vegetated/0% open water & mudflat
Vegetation Establishment (Overall Site)	Year 2	10% vegetated /90% open water & mudflat
	Year 3	20% vegetated/80% open water & mudflat
	Year 5	40% vegetated/60% open water & mudflat
	Year 6	60% vegetated/40% open water & mudflat
	Year 7	90% vegetated/10% open water & mudflat
Invasive Species	Years 1-7	Document eradication of invasive species
Fish	Year 1-7	Increase in fish species over baseline and documentation of species consistent with reference sites and tidal marsh habitat
Macroinvertebrate	Year 1	Increase in site index score over baseline
	Year 3	Increase in site index score over baseline
	Year 5	Increase in site index score over baseline
	Year 7	Increase in site index score over baseline

Preservation Area Monitoring Metrics & Performance Standards		
Metric/Variable	**Monitoring Year**	**Performance Standards**
Hydrologic Regime	Year 1-Year 7	Sustain hydrology conditions as compared to baseline
Vegetation Structure	Year 1-7	Sustain existing vegetative structure
Vegetation Establishment (Monitoring Plots)	Year 2	Sustain existing vegetative composition and structure
	Year 3	Sustain existing vegetative composition and structure
	Year 5	Sustain existing vegetative composition and structure
	Year 6	Sustain existing vegetative composition and structure
	Year 7	Sustain existing vegetative composition and structure
Fish	Year 1-7	Maintain fish species consistent with reference sites and tidal marsh habitat
Macroinvertebrate	Year 1	Sustain site index score
	Year 3	Sustain site index score
	Year 5	Sustain site index score
	Year 7	Sustain site index score

Table 9. cont.

Reference Sites Monitoring Metrics		
Monitoring Metrics	**Monitoring Year**	**Reference Sites**
Hydrologic Regime	Year 1-Year 7	Hydrology monitoring at Six Reference Hydrology Stations
Vegetation Structure	Year 1-7	Documentation of Stem Density and Species Composition within Four Reference Plots
Fish	Year 1-7	Documentation of Species Composition within All Reference Plots
Macroinvertebrate	Year 1	Documentation of Species Composition within All Reference Plots
	Year 3	Documentation of Species Composition within All Reference Plots
	Year 5	Documentation of Species Composition within All Reference Plots
	Year 7	Documentation of Species Composition within All Reference Plots

Additional Monitoring Metrics Within Project Area			
Metric/Variable	**Monitoring Year**	**Restoration & Preservation Areas (Anticipated Normal Range)**	**Reference Sites**
Hydric Soil Conditions	Year 1-Year 7	Maintain hydric soil conditions	N/A
Temperature	Year 1-Year 7	40 F^{o} (min) to 99 F^{o} (max)	To be collected within all vegetative and hydrology monitoring stations
DO	Year 1-Year 7	≥3 mgL (surface water daytime)	To be collected within all vegetative and hydrology monitoring stations
pH	Year 1-Year 7	6.0 - 8.5 std. units (surface water measurement)	To be collected within all vegetative and hydrology monitoring stations
Salinity	Year 1-Year 7	5ppt to 25ppt (surface water measurement)	To be collected within all vegetative and hydrology monitoring stations

Location of monitoring stations and plots depicted on Figure 14.
(Alber, 2008; Sheldon et. al, 2011; Conrad et. all, 2006; Cotton, 2004; White 2003; Alexander 2008; Pruitt, 2010)

14.9 Adaptive Management Plan

If the compensatory mitigation project cannot be constructed in accordance with the approved mitigation plans, the sponsor will notify the USACE. A significant modification of the compensatory mitigation project requires approval from the USACE. If monitoring or other information indicates that the compensatory mitigation project is not progressing towards meeting it's performance standards as anticipated, the sponsor must notify the USACE as soon as possible. The USACE will evaluate and pursue measures to address deficiencies in the compensatory mitigation project and will consider whether the compensatory mitigation project is providing ecological benefits comparable to the original objectives of the compensatory mitigation project. The USACE, in consultation with the responsible party (and other federal, tribal, state, and local agencies, as appropriate), will determine the appropriate measures. The measures may include site modifications, design changes, revisions to maintenance requirements, and revised monitoring requirements. The measures must be designed to ensure that the modified compensatory mitigation project provides aquatic resource functions comparable to those described in the mitigation plan objectives. Performance standards may be revised in accordance with adaptive management to account for measures taken to address deficiencies in the compensatory mitigation project. Performance standards may also be revised to reflect changes in management strategies and objectives if the new standards provide for ecological benefits that are comparable or superior to the approved compensatory mitigation project. No other revisions to performance standards will be allowed except in the case of natural disasters.

SCMG is the property owner, sponsor and party responsible for completing all actions necessary to produce a successful mitigation bank. The banker has already invested significant capital in the project. The property was purchased specifically for development of a tidal wetlands commercial mitigation bank and only following completion of the prospectus phase and site meeting with the IRT. No leans or mortgage is associated with the property and SCMG is fully committed to the success of the mitigation efforts.

The bank sponsor has considered potential problems and the need for flexibility and responsiveness to address and correct such potential problems. Since physical changes are limited to dikes and ditches, the sponsor acknowledges the potential for future minor modifications. Adaptive management actions may include but are not limited to widening of proposed breaches in dikes, installation ditch plugs, planting and/or seeding of target herbaceous species if natural regeneration is determined to be insufficient, breach bank stabilization, and site access/bridge improvements. Beyond these measures, no additional modifications are anticipated.

If significant problems with the mitigation efforts, whether the result of the mitigation design or associated with natural disasters, are identified during the monitoring period, regulatory agency personnel will be immediately consulted regarding the advisability of taking corrective action at that time. If, at the end of the seven year monitoring period, success criteria have not been satisfied, the sponsor will consult with the appropriate regulatory review agencies to determine specifically what remedial action should be taken.

14.10 Monitoring Results Reporting Protocols

The reporting schedule will include preparation and submittal of a construction report and annual monitoring reports.

14.10.1 Construction Report:

The initial report provided to the USACE will document the construction phase of the project and will be submitted within 60 days of completion of the construction activities. This document will provide the following:

(1) Corps Permit Number and Name of the Mitigation Bank

(2) Site location and latitude and longitude.

(3) A summary description of the construction project including: name of parties who participated in the construction activities including sponsor, agent, engineer, contractor,

etc., dates construction activities were initiated and completed, and equipment and materials used during the construction phase.

(4) As-built survey depicting the locations of structure removal and final elevations of construction areas (dike removal and water control structure removal areas).

(5) A summary description of monitoring plot establishment including number of plots, size, location, etc. Maps will be provided to show the location of the compensatory mitigation site relative to other landscape features, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the monitoring plan.

(6) Photographs documenting the construction phase, equipment and materials used and site conditions during construction.

(7) Photographs documenting installation of monitoring plots.

(8) Any other text, maps, photographs, or information necessary to document the construction phase and monitoring station/plot establishment phase of the project.

14.10.2 Annual Monitoring Reports:

Monitoring and mitigation bank status reports will be submitted annually to document the condition of the site. The monitoring report will provide the IRT with sufficient information on the compensatory mitigation project to assess whether it is meeting performance standards, and to determine whether a compliance visit is warranted. Non-compliance and default procedures may be taken if the bank sponsor fails to submit complete and timely monitoring reports.

Monitoring reports will be concise and provide the information necessary to assess the status of the compensatory mitigation project. Reports will describe the site conditions and whether the compensatory mitigation project is meeting its performance standards. The reports will include a monitoring report narrative that provides an overview of site conditions and functions and is generally less than 10 pages. Monitoring reports will also include appropriate supporting data to assist reviewers in determining how the compensatory mitigation project is progressing towards meeting its performance standards. Such supporting data may include plans (i.e. as-built plans), maps, and photographs to illustrate site conditions, as well as the results of functional, condition, or other assessments used to provide quantitative or qualitative measures of the functions provided by the compensatory mitigation project site.

All monitoring reports will contain the following in the report narrative:

(1) Corps Permit Number and Name of the Mitigation Bank

(2) Name of party responsible for conducting the monitoring and the date(s) the inspection was conducted.

(3) A brief paragraph describing the purpose of the approved project, acreage and type of aquatic resources impacted, and mitigation acreage and type of aquatic resources authorized to compensate for the aquatic impacts.

(4) Written description of the location, any identifiable landmarks of the compensatory mitigation project including information to locate the site perimeter(s), and coordinates of the mitigation site (expressed as latitude, longitudes, UTMs, state plane coordinate system, etc.).

(5) Dates the monitoring commenced and/or was completed.

(6) Short statement on whether the performance standards are being met.

(7) Dates of any recent corrective or maintenance activities conducted since the previous report submission.

(8) Specific recommendations for any additional corrective or remedial actions.

The report will list monitoring requirements and performance standards, as specified in this BI and evaluate whether the compensatory mitigation project site is successfully achieving the approved performance standards. A table will be included for comparing the performance standards to the conditions and status of the developing mitigation site.

Summary data will be provided to substantiate the success and/or potential challenges associated with the compensatory mitigation project. Photo documentation of the site conditions will be included. Photos will be formatted to print on standard 8 ½" x 11" paper, dated, and clearly labeled with the direction from which the photo was taken. The photo location points should also be identified on the appropriate maps.

Maps will be provided to show the location of the compensatory mitigation site relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation plan. Each map will be formatted to print on standard 8 ½" x 11" paper and include a legend and the location of any photos submitted for review.

Lastly, a general statement will be included which describes the conditions of the compensatory mitigation project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the permittee or sponsor, including a timetable, should be provided.

All monitoring reports will be submitted to the USACE and other participating IRT members on an annual basis and after completing in-the-field data collection according to standard methods at the appropriate times and such that the reporting schedule is met.

The first monitoring report will be submitted following completion of the construction activities. Data collection will occur a minimum of ten months from the date restoration/enhancement work completed.

15.0 SITE OWNERSHIP & PROTECTION

Upon approval of the BI, the owner will grant a conservation easement or transfer fee title to the Georgia Land Trust, a qualified third party grantee. This land trust or "Holder" is a non-profit, publicly-funded, tax-exempt, qualified organization under §§ 501(c)(3) and 509(a)(2) of the Internal Revenue Code of 1986, *as amended* (herein "the Code"). The Holder is a domestic non-profit corporation, registered with the South Carolina Secretary of State and is authorized by the laws of the South Carolina to accept, and is willing to accept, conservation easements or title to the property for the purpose of preserving and protecting natural, scenic, educational, recreational, or open-space values of real Protected Property. This organization currently holds easements on numerous mitigation banks throughout the southeast and has the resources and commitment to preserve those values. The Holder has adopted, by Resolution of its Board of Directors, the Land Trust Alliance's *Land Trust Standards and Practices*, published in 2004.

Contact information for the easement holder is as follows:

Georgia Land Trust
Attn: Mr. Justin Park
428 Bull Street, Suite 201
Savannah, Georgia 31401
912-231-0507 (office)

A draft Conservation Easement will be provided to Office of Counsel (OC) for review and approval prior to recording/closing. The attorney for the proposed easement holder and OC will provide assistance with preparation and recording of these documents.

With the exception of transfer of fee title to a conservancy or government agency, at any time during the life of the mitigation bank, should the real property and/or mitigation bank be transferred, sold, conveyed, merge with another entity, partnership, corporation or business, be subject to foreclosure, bankruptcy, judgment or any other action affecting the ownership of the real property and/or mitigation bank, the owner of the property and/or mitigation bank shall notify the USACE in writing a minimum of sixty days prior to any transfer or action affecting the sale of the real property or mitigation bank. No further credits shall be sold until

the USACE has reviewed the information and acknowledged the new owner. USACE shall determine whether the mitigation bank is in compliance and whether it may continue to operate and sell credits.

16.0 MITIGATION BANK FINANCING AND ASSURANCES

The following provides a general discussion of financial requirements for the proposed project.

16.1 Statement of Adequate Financing:

Adequate financing is available to accomplish the proposed work on the mitigation bank site. The applicant acquired the property, following the IRT meetings, specifically for development of a mitigation bank. There are no liens/mortgages on the property. The sponsors have and will continue to fund all activities associated with the proposed project.

16.2 Financial Assurances

SCMG is a company whose members have participated in permitting, development, construction, and monitoring of mitigation projects in Georgia and Florida. The success of these projects and fulfillment of all obligations on the part of the sponsor provides assurance that all necessary actions and financial requirements will be applied to the project to insure success.

In addition to the reputation of the participants demonstrated through past projects, this BI includes appropriately scheduled credit releases where credits are released only after identifiable tasks occur and measurable success criteria have been met. If the USACE determines that the project is not meeting performance standards or complying with the terms of this BI, appropriate action will be taken. Such actions may include, but are not limited to, suspending credit sales, adaptive management, decreasing available credits, and terminating the instrument.

To date the bank sponsor has purchased the property and completed the tasks required for the preparation of a draft banking instrument. This required a tremendous capital investment with no return to date. The mitigation bank is projected to be a 20 to 30 year project. Were the proposed mitigation activities to be determined unsuccessful at any point during the monitoring period, the entire project would be a financial failure.

The site will be owned and managed by the sponsor and the proposed restoration efforts do not have a high degree of difficulty and will succeed. While not necessary, financial assurances are proposed and will include a letter of credit during the construction period, a letter of credit during the monitoring period (either one letter for each year of the annual seven year monitoring or one letter for all seven years combined), and a non-wasting endowment for long term maintenance (i.e. gates, signage, taxes, etc.). These commitments fully secure all financial obligations required for the construction, monitoring and long term success of the project.

16.3 Amount and Form

Financial assurance for the construction and seven year mitigation monitoring phase of the project will be provided in the form of a letter of credit. Preliminary construction cost estimates and monitoring cost estimates can be found in Appendix S. The construction letter of credit will be in place prior to beginning of construction and the letter of credit for the monitoring will be in place prior to each year of monitoring for the seven year monitoring period. A copy of the draft "Agreement for Construction Letter of Credit" is provided in Appendix R.

Total construction cost has been estimated but construction bids will be obtained following approval of the bank and within six months prior to construction. A letter of credit will be obtained for the final cost of the construction based on bids obtained at that time. In addition, letter of credit for monitoring will be provided based on estimated annual monitoring costs the first year and then actual monitoring costs for the following six years based on costs associated with year one monitoring.

16.4 Payable at the Direction of USACE

The proposed financial assurances shall be payable at the direction of the USACE to his designee or to a standby trust agreement. When a standby trust is used (e.g., with performance bonds or letters of credit), all amounts paid by the assurance provider shall be deposited directly into the standby trust fund for distribution by the trustee in accordance with the USACE's instructions. Situations that may

result in payment of the financial assurance could include, but are not limited to, default before the restoration work is completed, damage to the site during the monitoring period that is not adequately addressed by the bank's sponsor, or any other situation that leaves the site in a non-compliant condition where additional actions are necessary to correct non-functioning conditions.

16.5 Plan for Eventual Phase Out

The proposed financial assurances will be phased out as performance standards are met. Once the mitigation bank has been determined by the USACE to be successful in accordance with its performance standards and upon completion of final success and release of final credits, the remaining obligations in the financial assurances will be released.

17.0 LONG TERM MANAGEMENT & MAINTENANCE PLAN

As discussed above, the sponsor is currently working with a land trust to at a minimum hold the easement for the mitigation bank and possible conveyance of the property. A long term management plan was developed to provide perpetual maintenance of the following determination of success and included input from the land trust. The conservation easement will clearly outline the long term management plan for the property and the obligations of the sponsor/grantor. This plan will include but is not limited to the following:

17.1 General

The Holder shall have the right to conserve and protect the Conservation Values of the Protected Property in perpetuity. The Holder shall have the right to prevent any activity or use of the Protected Property that is inconsistent with the purpose of the conservation easement, and to require the restoration of such areas or features of the Protected Property that may be damaged by any inconsistent activity or use, pursuant to the remedies set forth in Section F.

17.2 Rights of Access

Holder shall, at reasonable times and upon notice to Grantor, have the right to enter and go upon the Protected Property for purposes of inspection and to take actions necessary to verify compliance with the Restrictions as set out herein. Holder shall also have the rights of visual access and view, and to enter and go upon the Protected Property for purposes of making scientific or educational observations and studies, and taking samples, in such a manner as will not disturb the quiet enjoyment of the Protected Property by Grantor. However, the easement conveys no right of access or entry by the general public to any portion of the Protected Property.

17.3 Notice of Violation & Corrective Action

If Holder determines there has been a breach or violation of the terms of the easement, by Grantor or another party, the Holder and/or the Third-Party shall give written notice to the Grantor of such violation and demand corrective action sufficient to cure the violation, and where the violation involves injury to the Protected Property resulting from any use or activity inconsistent with the purposes of the easement, to restore the portion of the Protected Property so injured to its prior condition in accordance with a plan to be approved by the Holder and Third-Party.

If the Grantor fails to cure the violation within thirty (30) days after receipt of such notice to thereof, or under circumstances where the violation cannot reasonably be cured within a thirty (30) day period, fails to begin curing said violation within the thirty (30) day period, or fails to continue diligently to cure such violation until finally cured, the Holder may undertake such actions, including legal proceedings, as are necessary to effect such corrective action, including to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction, and to require the restoration of the Protected Property to the condition that existed prior to any such injury.

17.4 Enforcement

If, however, the Holder, solely by the exercise of its discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the Conservation Values of the Protected Property, Holder may pursue remedies under this Easement without prior notice to Grantors, or waiting for the period provided for cure to expire.

The Holder shall be entitled to recover damages for violation of the terms of the easement or injury to any Conservation Values protected by this easement, including, without limitation, damages for

the loss of scenic, aesthetic, or environmental values.

The costs of a breach or violation, correction or restoration, including the Holders expenses, court costs, and attorneys' fees, shall be paid by Grantor, unless Grantor ultimately prevails in a judicial enforcement action, in which case each party shall bear their own costs.

17.5 Transfer & Transfer Fee

The sponsor agrees to incorporate the terms of the conservation easement in any deed or other legal instrument which transfers any interest in all or a portion of the Protected Property. The sponsor agrees to provide written notice to the USACE and Holder of such transfer at least sixty (60) days prior to the date of transfer. The failure of Grantor to comply with this paragraph shall not impair the validity or enforceability of this easement. There shall be assessed by the Grantee, and collected from all purchasers of the protected property, a transfer fee equal to one percent (1%) of the sales price or other consideration paid in connection with the transfer of any interest in such Protected Property, which transfer fee shall be paid to the Holder at the time of the transfer. This sum shall be placed in Holder's stewardship fund, or such similarly named successor fund, to finance Holder's efforts to uphold its duties and responsibilities under this conservation easement on this Protected Property as well as on Holder's other protected properties. In the event of non-payment of such transfer fee, Holder shall have the right to file a lien for such unpaid transfer fees which shall be a lien on the protected property but which lien shall be subordinate to the easement and to the lien of any first mortgage on the Protected Property. Any such lien may be enforced and/or foreclosed in accordance with the laws of the State of South Carolina. Holder may require the Grantor and/or any subsequent purchaser to provide reasonable written proof of the applicable sales price, such as executed closing statements, contracts of sale, copies of deeds or other such evidence. Any transfer subsequent to the conveyance of this

The conservation easement without consideration and sale of mitigation credits shall be exempt from the assessment of such transfer fee. An exchange of properties pursuant to § 1031 of the Code, or similar statute, shall be deemed to be for consideration based on the market value of the Protected Property received at the time of such transfer. Market value shall be determined by agreement of the Grantor and the Holder, or in the absence of such agreement, by an MAI appraiser selected by the Holder, whose appraisal fee shall be paid by the Holder. Any transfer to Holder shall be exempt from the assessment of such transfer fee.

Upon completion of the restoration efforts, the site will function naturally and will not be maintained artificially. Hydrology within the wetland area will be supplied by natural water sources (spring, ground water and surface water). The site will be restored/planted with native tree species. Erosion and sedimentation control measures will be implemented during project construction. A conservation easement will provide additional protection and site review in perpetuity. Because of the site's location, restoration opportunities and measures to be implemented during the mitigation activities, the site is sustainable as a mitigation bank.

Since long term maintenance will not be required for the success of the mitigation project (restored marsh will function naturally following restoration), funding and financing for long term management will not be necessary. However, as with any property, general maintenance of the property permitted by the easement will be the financial responsibility of the property owner.

The bank sponsor has not proposed an activity, structure, technique, or other action (i.e. maintenance of pumps, necessary control of nuisance vegetation or a high potential for encroachment) with a foreseeable potential for management or maintenance beyond the 7-year monitoring period. For this reason, a long term management plan should not be necessary to ensure success after the 7-year monitoring period. More importantly and as recommended by IRT, the project includes perpetual protection by a conservation easement.

Finally, as indicated in Section H. of the conservation easement, "Grantor will provided funds to Holder, which holder shall keep as a line item separate from other budgetary categories, for the purpose of fulfilling the Grantor's obligations for the long-term

monitoring of the Protected Property and enforcement of the terms of this Conservation Easement.".

17.6 Long Term Maintenance Plan & Funding

The mitigation site will be posted with appropriate signs and marked clearly to guard against unauthorized disturbance to this area during or following construction activities. Signs will meet the following criteria:

- painted metal, printed plastic, or other durable construction;
- placed at intervals not to exceed 250';
- affixed at approximately 5' above ground elevation; contain the phrase "Conservation Area Do Not Disturb" or similar;
- text shall be of sufficient font, size and color to be easily legible at 25';
- signs shall face away from the protected property.

Upon completion, the project site will contain tidal marsh and associated tributaries. For this reason, long-term maintenance will be limited to sign repair and minimal gate management to prevent trespassing on remaining dikes. Over time, the site will continue to convert from an accessible impoundment to an inaccessible tidal marsh. Thus, this project does not include any long term liability associated with potential damages to the environmental function and service of the bank site caused by trespass, vandalism, or unauthorized uses. Once the mitigation bank requirements and all monitoring has been completed, any damage to the bank property, wetlands and buffers caused by an Act of God, shall not be required to be restored.

While no long term management will be required, the sponsor will establish a non-wasting endowment to insure funding for signage and gate maintenance. The sponsor has completed a long term management cost assessment and analysis. Appendix S provides an estimate of costs for each of the long term management tasks, total annual cost, and investment requirement for a non-wasting endowment. Note that several of the items such as signage have a greater than 10 year expected life and the total cost was divided by that 10 year life.

Prior to the release of credits associated with the year 7 monitoring, the sponsor will work with the USACE to finalize the long term maintenance by establishing the endowment. If final annual costs are determined to be greater or less than the estimate above, the endowment figure will be adjusted accordingly.

17.7 Long Term Management & Funding

The proposed mitigation bank will not require long term management or funding. The bank sponsor has not proposed an activity, structure, technique, or other action (i.e. maintenance of pumps, necessary control of nuisance vegetation or a high potential for encroachment) with a foreseeable potential for long term management or maintenance.

Upon completion of the restoration efforts, the site will function naturally as a tidal marsh and will not be maintained artificially. The predictable success of this mitigation plan can be seen upstream and downstream of the project site where abandoned impoundments have been restored into tidal marsh and are functioning naturally. For this reason, a long term management plan is not be necessary to assure success after the 7-year monitoring period.

18.0 DEFAULT AND CLOSURE PROVISIONS

In the event the bank sponsor defaults (i.e. fails to meet milestones, perform necessary repair and maintenance, provide timely monitoring reports, or any other responsibility identified in the BI), the USACE will notify the bank sponsor in writing that the bank is out of compliance and request a response within 30-days detailing how the discrepancies will be corrected. If no satisfactory resolution is reached, the USACE will close the subject bank and all remaining credits, either released or not, will be withheld and not an acceptable source of compensatory mitigation until the bank is determined to be in compliance.

19.0 STATEMENT OF LEGAL RESPONSIBILITY

The legal responsibility for providing compensatory mitigation lies with the sponsor once a permittee secures credits from the sponsor.

Mitigation for Wetlands

14.4. *Preservation Table.*

PRESERVATION MITIGATION FACTORS FOR WETLANDS AND OTHER WATERS OF THE U.S. EXCLUDING STREAMS

FACTORS	OPTIONS				
Priority Category	Tertiary 0.1		Secondary 0.2		Primary 0.4
Existing Condition	Impaired -0.1		Slightly Impaired 0		Fully Functional 0.1
Degree of Threat	Low -0.1		Moderate 0.1		High 0.2
Control	Covenant Private 0	Covenant POA 0.1		Conservation Easement 0.4	Transfer Fee Title Conservancy 0.6
Kind	Category 5 -0.1	Category 4 0	Category 3 0.1	Category 2 0.2	Category 1 0.3
*Location	Zone 5 -0.1	Zone 4 0	Zone 3 0.1	Zone 2 0.2	Zone 1 0.3

Note: Preservation credit should generally be limited to those areas that qualify as Fully Functional or Slightly Impaired. Impaired sites should be candidates for enhancement or restoration credit, not preservation credit. In special circumstances when Impaired sites are allowed preservation credit (e.g. within the scope of some OCRM wetland master planned projects), a negative factor will be used to calculate credits as per the matrix table.

Proposed Preservation Mitigation Sample Worksheet

Factor	Tidal Marsh	Tidal Creeks	Area 3	Area 4	Area 5
Priority Category	0.4	0.4			
Existing Condition	0.1	0.1			
Degree of Threat	-0.1	-0.1			
Control	0.4-0.6	0.4-0.6			
Kind	0.3	0.3			
Location	-0.1-0.3	-0.1-0.3			
Sum of m Factors	M_1 = 1.0-1.6	M_2 = 1.0-1.6	M_3 =	M_4 =	M_5=
Mitigation Area	A_1 = 189.46	A_2 =13.2	A_3 =	A_4 =	A_5=
M x A =	189.5-303.1	**0.0			

Total Required Credits = $\sum\sum$ (M··A) = 189.5-303.1

***Location: Primary Service Area (Zone 1), Secondary Service Area (Zone 3), Tertiary Service Area (Zone 5)**

****Existing tidal creeks within preservation area will be preserved but will not generate any credit.**

Preservation Areas

Area 1 Tidal Marsh (189.5 Acres of Unit 10)

Area 2 Tidal Waters (13.2 Acres of Unit 11)

Mitigation for Wetlands

14.3. *Restoration and Enhancement Table.*

RESTORATION AND ENHANCEMENT MITIGATION FACTORS FOR WETLANDS AND OTHER WATERS OF THE U.S. EXCLUDING STREAMS

Factors Options					
Net Improvement	Minimal Enhancement----------to----------Excellent Restoration 0.1				4.0
Control	N.A. 0	Covenant Private 0.1	Covenant POA 0.2	Conservation Easement 0.4	Transfer Fee Title Conservancy 0.6
Temporal Lag	N.A.-| 0	Over 20 -0.3	10 to 20 -0.2	5 to 10 -0.1	0 to 5 0
Credit Schedule	Schedule 5* 0	Schedule 4 0.1	Schedule 3 0.2	Schedule 2 0.3	Schedule 1 0.4
Kind	Category 5 -0.1	Category 4 0	Category 3 0.2	Category 2 0.3	Category 1 0.4
Location	Zone 5 -0.1	Zone 4 0	Zone 3 0.2	Zone 2 0.3	Zone 1 0.4

N.A. = Not Applicable -| Use this option to calculate credits for enhancement by buffering

Proposed Restoration or Enhancement Mitigation Sample Worksheet

Factor	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Net Improvement	3.5	2.5	4.0	3.0	1.0	0.1
Control	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.6
Temporal Lag	0	0	0	0.0	0.0	0.0
Credit Schedule	0.0	0	0.0	0.0	0.0	0.0
Kind	0.4	0.4	0.4	0.4	0.4	0.0
Location	-0.1-0.4	-0.1 - 0.4	-0.1-0.4	-0.1-0.4	-0.1-0.4	-0.1-0.4
Sum of m Factors	M_1= 4.2-4.9	M_1= 3.2-3.9	M_2= 4.7-5.4	M_3= 3.7-4.4	M_3= 3.7-4.4	M_4= 0.4-1.1
Mitigation Area	A_1= 251.45	A_1= 194.06	A_2= 1.3	A_3=9.32	A_3=31.47	A_4= 3.84
MXA=	1056.1-1232.1	621.0 - 756.8	6.1-7.0	34.5-41.0	53.5 - 75.5	**0.0
Total Stream Restoration/Enhancement Credits=∑∑(M··A)=						**1771.2 – 2112.4**

****Hammocks will be preserved but will not generate any credit.**

Restoration & Upland Buffer Areas

Area 1 Forested Upland (0.62 Acre of Unit 1), Forested Wetland (82.15 Acres of Unit 2), Mowed Field (81.01 Acres of Unit 4), Flooded Field (62.06 Acres of Unit 5), Interior Dike (25.61 Acres of Unit 6)
Area 2 Shrub Scrub (194.06 Acres of Unit 3)
Area 3 Exterior Dike (0.65 Acres of Unit 7), Interior Canal (0.65 Acres of Unit 8)
Area 4 Interal Canals/Ditches (9.32 Acres of Unit 8)
Area 5 Open Water Pond (31.47 Acres of Unit 9)
Area 6 Forested Upland (1.64 Acres of Unit 1), Exterior Dike (2.20 Acres of Unit 7)

FIGURE 13, 2006 CIR PHOTOGRAPH MITIGATION ACTIVITIES/PROPOSED HABITATS MAP

Exhibit D

RECORDED June 10, 1969
Chatham County, Georgia
Record Book 95-X, folio 635

WATER USE AGREEMENT

THIS AGREEMENT, by and between HARRY G. HASKELL, JR., MARTHA C. DENHAM, JOHN S. POINDEXTER, DONALD R. LIVINGSTON, DAVID C. BARROW, JR., as Executor under the will of Emma M. Huger Barrow, deceased, and LOUISE L. HARRISON, hereinafter referred to as "Owners", and the UNITED STATES DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, BUREAU OF SPORT FISHERIES AND WILDLIFE, hereinafter referred to as "the Bureau".

WHEREAS, the Owners hold title to certain lands in Jasper County, South Carolina, which lands will be affected by construction of the tide gate structure in Back River, Savannah Harbor Project, and which lands are bounded on the east by Screven Ferry Road, on the south by Back River, on the west by Savannah National Wildlife Refuge, and extending to high ground on the north, and are outlined on Water Use Agreement plat recorded in the land records of Jasper County, South Carolina, book No. 11, page No. 69, attached hereto and made a part hereof; and

WHEREAS, the Bureau administers certain lands and waters located in Jasper County, South Carolina, and Chatham County, Georgia, as the Savannah National Wildlife Refuge, which refuge lands will also be affected by the said Savannah Harbor project, and

WHEREAS, the United States Department of the Army, Corps of Engineers, as a part of the Savannah Harbor, Georgia, Project, will construct a water supply canal leading from control structure 8, located on lands of the Savannah National Wildlife Refuge, approximately as shown on the attached map, for the purpose of furnishing water to privately-owned lands of the said Owners, and

WHEREAS, because of operational requirements of the Bureau in connection with its management of the Savannah National Wildlife Refuge, it is necessary to establish a schedule for release of water into the supply canal that will serve private lands.

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

1. The Bureau, through its local manager in charge, shall be solely responsible for operation of control structure 8.

2. The Bureau shall have the priority and right to manipulate the control gate No. 8 during the first twenty days in each month, for the purpose of irrigating or draining refuge lands, as the case may be.

3. During the remainder of each month, upon request of the Owners or their designated representative, the Refuge Fresh Water Canal and appurtenances shall be operated to supply water to control structure 8 which shall be opened by the Bureau so as to permit use of water upon the Owners' respective lands.

4. While the periods of use set out above are intended to be binding on all parties hereto, it is nevertheless further provided that the schedule of gate closure may, if desired, be varied from time to time upon mutual agreement between the Owners and the Refuge Manager in charge.

5. It is understood and agreed that although a party to this agreement, the Bureau does not in any way guarantee the delivery of water into the supply canal. If, for reasons beyond its control, there is not sufficient water available at the time or times the gate is opened into the supply canal, the Bureau shall not be liable for any claim of damage for failure to deliver said water to lands of the owners.

6. It is further understood and agreed that this agreement shall be binding not only upon the parties hereto, but also upon their heirs, successors or assigns, and that the water made available in the supply canal shall be used only for the benefit of lands as outlined on the attached map, and for no other.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on this, the 28th day of January, 1969.

In the presence of:

_____

_____

_____

_____

_____

_____

_____

_____ (L.S.)
Harry G. Haskell, Jr.

_____ (L.S.)
Martha C. Denham

_____ (L.S.)
John S. Poindexter

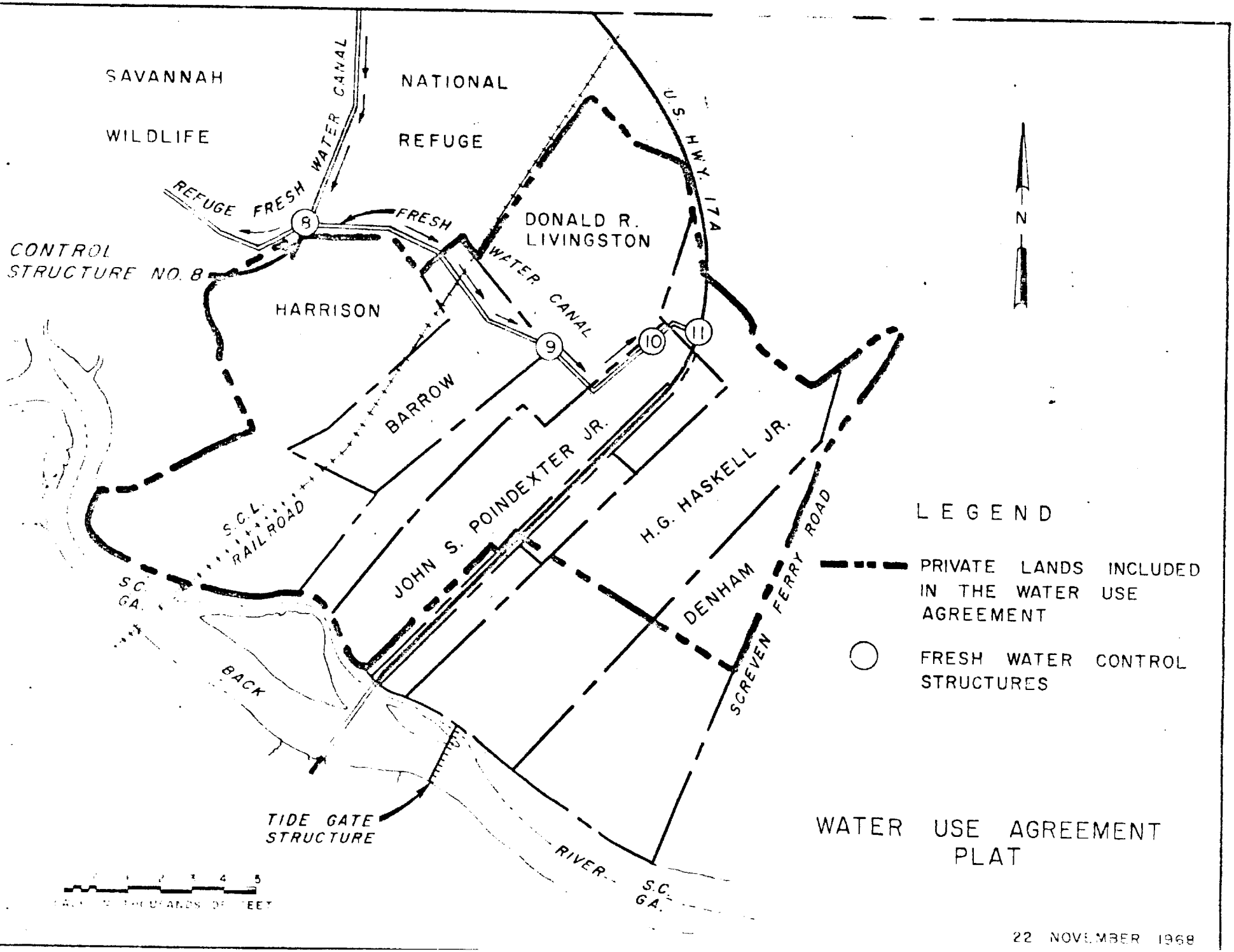
_____ (L.S.)
Donald R. Livingston

_____ (L.S.)
David C. Barrow, Jr., as executor under the will of Emma M. Huger Barrow, deceased

_____ (L.S.)
Louise L. Harrison

BUREAU OF SPORT FISHERIES AND WILDLIFE

By: _____
Regional Director



A C K N O W L E D G M E N T

STATE OF GEORGIA)
) ss
COUNTY OF FULTON)

Be it remembered that on the 5th day of June, 1969, before the subscriber, a Notary Public in and for the County of Fulton, State of Georgia, appeared C. Edward Carlson, Regional Director of the Bureau of Sport Fisheries and Wildlife, described in and who executed the foregoing instrument of writing, dated January 28, 1969, and acknowledged that he executed the said instrument freely and voluntarily for the uses and purposes therein stated; and I further certify that the said person is known to me to be the person described in and who executed the said instrument.

Given under my hand and official seal.

Gertrude Ryan
Notary Public

My Commission expires May 26, 1972

(SEAL)

ACKNOWLEDGMENTS

STATE OF Georgia)
) ss.
COUNTY OF Chatham)

On this 2nd day of April, 1969, before me personally appeared JOHN S. POINDEXTER, known to me to be the person who is described in and who executed the within instrument, and acknowledged to me that he executed the same.

Patricia S. Bean
Notary Public

PATRICIA S. BEAN
Notary Public, Chatham County, Ga.
My Commission Expires Dec. 1, 1970

(SEAL)

My commission expires _____

STATE OF Georgia)
) ss.
COUNTY OF Chatham)

On this 8th day of April, 1969, before me personally appeared DONALD R. LIVINGSTON, known to me to be the person who is described in and who executed the within instrument, and acknowledged to me that he executed the same.

Notary Public

(SEAL)

My commission expires _____

STATE OF Georgia)
) ss.
COUNTY OF Chatham)

On this 29th day of January, 1969, before me personally appeared DAVID C. BARROW, JR., as Executor under the will of Emma M. Huger Barrow, deceased, known to me to be the person who is described in and who executed the within instrument, and acknowledged to me that he executed the same.

Notary Public

My commission expires _____

(SEAL)

ACKNOWLEDGMENTS

STATE OF _____)
) ss
COUNTY OF _____)

On this _____ day of _____, 1969, before me personally appeared LOUISE L. HARRISON, known to me to be the person who is described in and who executed the within instrument, and acknowledged to me that she executed the same.

_____
Notary Public

My commission expires _____

(SEAL)

STATE OF Delaware)
) ss
COUNTY OF New Castle)

On this 21 day of Feb., 1969, before me personally appeared HARRY G. HASKELL, JR., known to me to be the person who is described in and who executed the within instrument, and acknowledged to me that he executed the same.

_____
Notary Public

My commission expires 1-6-71

(SEAL)

ACKNOWLEDGMENT

STATE OF SOUTH CAROLINA)
) ss:
COUNTY OF Jasper)

Personally appeared before me [signature],

and made oath that she saw [signature]

sign, seal and deliver the within conveyance for the uses and purposes therein mentioned, and that she with [signature], in the presence of each other, witnessed the due execution thereof.

[signature]

Sworn to before me the 8 day of March, 1969.

[signature]
Notary Public for South Carolina

(SEAL) My commission expires Jan 1 1971

Exhibit E

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Savannah Coastal Refuges Complex
Blackbeard Island, Harris Neck, Pinckney Island, Savannah, Tybee, Wassaw and Wolf Island National Wildlife Refuges
694 Beech Hill Lane
Hardeeville, SC 29927
Ph: (843) 784-9911 / Fax: (843) 784-2465
January 14, 2011

Lt. Colonel Jason A. Kirk
District Engineer
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, SC 29403-5107

Dear Colonel Kirk:

The Savannah National Wildlife Refuge (Refuge), U.S. Fish and Wildlife Service has reviewed the Clydesdale Mitigation Bank: Draft Banking Instrument (DBI) dated November 10, 2010 and submitted by Resource and Land Consultants. The Instrument proposes to establish a 693-acre saltwater mitigation bank in the lower Savannah River estuary adjacent to the Refuge in Jasper County, SC. The stated overall goal of the mitigation project "is to restore and sustain the physical, chemical, and biological characteristics of a tidal estuarine wetland system." In addition, the restoration will provide an ecological benefit to the Savannah River and an overall improvement within the watershed. The Refuge believes the document is misleading and disagrees with these assertions and strongly objects to the mitigation bank.

The DBI repeatedly refers to "restoration" of tidal wetlands within the boundaries of the mitigation bank. The Refuge disagrees and objects to using the term "restoration" when this is clearly conversion of one wetland type to another for the sole objective of selling mitigation credits. The DBI is proposing to convert managed, freshwater wetlands to salt marsh for in-kind, compensatory mitigation. Freshwater marshes, both tidal and managed, are highly productive and diverse wetlands. The Savannah estuary has lost over 8,000 acres of an estimated 12,000 acres of tidal, freshwater wetlands from the cumulative impacts of deepening the Savannah Harbor. Those impacts make the existing, managed freshwater wetlands, as well as the remaining tidal, freshwater wetlands, much more valuable in providing habitat for a diversity of wildlife, especially wintering migratory birds. The estuary and associated wildlife can ill-afford to lose additional freshwater wetlands through conversion to salt/brackish wetlands. Therefore, the Refuge strongly objects to the conversion of these freshwater wetlands for in-kind, compensatory mitigation. In addition, the Refuge believes this sets a very bad precedent in converting freshwater wetlands to saltmarsh to gain in-kind mitigation credits, especially with mitigation banks where the sponsor could potentially reap greater financial rewards.

The DBI itself confirms the area was tidal, freshwater marsh in describing past land use of the area, which consisted of rice production during the 1700's and 1800's followed by use for other agricultural crops including corn, cotton, and lettuce. All of these crops require freshwater and are not tolerant of salt water. It was not until the installation of the tide gate associated with the 1974 deepening of the Savannah Harbor that salt water moved into the area of the mitigation bank and converted the non-impounded, tidal, freshwater wetlands to salt/brackish marsh.

In addition, the DBI speaks of a "large area of restored tidal marsh that is a part of the Savannah National Wildlife Refuge" (page 5, Section D). Again, prior to the 1970's, this area was tidal, freshwater marsh and was converted to less diverse, brackish marsh with harbor expansions. Therefore, we reject the use of the term "restored" in describing this area. The DBI also states that "countless" fish, insects, birds, and macro-invertebrates will benefit from this conversion from freshwater to saltwater marsh as well as an "overall improvement within this watershed." Although a number of species will benefit, it will be fewer species of a different suite with an overall reduction in bio-diversity. We believe the conversion of this area into saltmarsh will be detrimental to the diversity and productivity of the watershed.

The Refuge needs clarification concerning the application of the hydrogeomorphic and SOP methods in making the contention that impoundments maintain little function and value when compared to natural marsh systems. Indeed, function is modified to hold areas of wetlands in certain early successional stages for a variety of objectives. The impoundment system on the Refuge is managed to provide high-quality, freshwater wetlands for a diversity of wildlife within the Savannah estuary, which has lost the majority of its tidal, emergent, freshwater wetlands. The value of these impoundments is without question. The Refuge impoundments may support up to 15-20% of South Carolina's wintering waterfowl along with a diversity of other migratory birds including high-priority species such as purple gallinules, swallow-tailed kites, and Bald Eagles. In addition, the DBI states that impoundments are non-natural communities. We find this statement difficult given the proposed mitigation bank is converting this area to a non-natural wetland type exacerbated by the cumulative impacts of harbor expansions. Therefore, as with the misuse of the term restoration, we disagree with the DBI assertion concerning the function and value of impoundments.

Furthermore, the Refuge believes a Net Improvement Factor of 4.0 is not accurate for several reasons. The comparison between tidal marsh and impoundments, where the impoundments are considered non-functional with little to no value, is not a valid comparison. A site visit of the area in October 2009 revealed substantial use of a flooded impoundment by a number of different species of birds. In addition, the impoundments on the Refuge are used extensively by a number of species of wildlife beyond those of migratory birds. The stated objectives of the mitigation bank are to restore the natural characteristics of a tidal, estuarine system. We question the use of the area immediately outside the impounded, freshwater wetlands as a reference site. This marsh is highly altered and could potentially change with mitigation actions associated with the current proposed expansion of the Savannah harbor.

In summary the Refuge objects to the proposed Clydesdale Mitigation Bank. We believe the conversion of freshwater wetlands to saltwater wetlands reduces diversity within the Savannah estuary and sets a bad precedent of converting one wetland type to another for in-kind mitigation

credits to potentially further financial gains. In addition, we believe the document is misleading in its assertion that managed, freshwater impoundments are of substantially less value than salt/brackish wetlands and the reference area is a valid comparison.

The Refuge appreciates the opportunity to provide comments to the document. If you have any questions, please feel free to contact Chuck Hayes, Supervisory Wildlife Biologist at 843.784.9911 ext. 107. Thank you.

Sincerely,

Jane M. Griess

Jane Griess
Project Leader

cc: Nat Ball, Army Corps of Engineers
Mark Leao, U.S. Fish and Wildlife Service

Exhibit F

South Carolina Department of
Natural Resources

1000 Assembly Street Room 310A
PO Box 167
Columbia, SC 29202
803.734.3766 Office
803.734.9809 Fax
perryb@dnr.sc.gov

John E. Frampton
Director
Robert D. Perry
Director, Office of
Environmental Programs

December 9, 2011

Mr. Nathaniel I. Ball
U. S. Army Corps of Engineers
69-A Hagood Avenue
Charleston, SC 29403-5107

REFERENCE: Comments on Proposed Clydesdale Mitigation Bank Final Banking Instrument, October 2011.

Dear Mr. Ball,

As you know, the South Carolina Department of Natural Resources (DNR) has major concerns with mitigation strategies that involve conversion of existing tidal managed wetlands under the pretense of wetland restoration. These concerns have been expressed in numerous meetings of the Interagency Review Team (IRT) where the proposed Clydesdale Mitigation Bank (aka P/N SAC 2009-00756, South Coast Environmental Group) has been discussed. Additionally, DNR has submitted several letters at various phases of the planning process for the referenced proposed project, specifically on the Proposed Bank Prospectus (December 22, 2009), the Baseline Monitoring and Functional Assessment Report (May 20, 2010) and the Draft Mitigation Banking Instrument (December 17, 2010). DNR committed to a fair and balanced review of the Clydesdale Final Banking Instrument (FBI) submitted on October 24, 2011. Please consider the following comments in the review of this proposed bank.

A review of the response to agency comments, dated October 18, 2011 demonstrates the applicant continues to defend the significantly flawed assumptions put forth in the Draft Mitigation Banking Instrument while dismissing the legitimate and science-based concerns submitted by DNR as well as other members of the IRT and interested reviewers. DNR finds it disappointing that such concerns could not be persuasively addressed so as to satisfy well expressed and thoughtful concerns. We find the applicant's responses, to previously submitted comments by all concerned, to be inadequate in providing convincing evidence the bank should be permitted. The applicant's refusal to modify the FBI in accordance with the multiple concerns that were submitted appears to indicate there is a strident unwillingness to modify any particulars of the proposed bank.

Section 4.0 Service Area, Page 3 – The proposed service area has not been revised from that proposed in the DBI and continues to include the majority of the South Carolina coastline,

including several major drainage basins outside of the Savannah River Basin. A service area of this size and scope is inconsistent with the Corps of Engineers Final Rule on Compensatory Mitigation as well as the Joint State and Federal Administrative Procedures for the Establishment and Operation of Mitigation Banks in South Carolina. We continue to recommend that the service area for this bank be limited to the Savannah River watershed represented by HUC Codes 03060109 as the primary service area and 03060110 as the secondary watershed. A tertiary service area is not appropriate for this bank.

Section 6.3 Topography, Page 7 – Elevations within the bank site are described as being identical to elevations outside of the managed wetland units. Data provided in the DBI does not support this description. Elevations within managed tidal wetlands are considerably lower than those outside. This is typical of managed wetlands that have been manipulated for agricultural applications and plant assemblages consistent with dry-soil habitat management. These past mechanical and hydrological manipulations have caused compaction, soil oxidation and subsidence resulting in substrate elevations lower than natural, surrounding elevations. This being the case, it will be impossible to effectively establish target emergent vegetation in a large portion of the proposed mitigation site. The result will be open water. It will be decades before natural tidal and transport processes result in significant increases in marsh elevation, and there is cause to believe this may not naturally occur in marsh zones removed from the edge of the Savannah River.

Section 6.4 Vegetation List, Past/Present/Potential – The present vegetation is a reflection of various fish and wildlife habitat management strategies employed on the site over recent years in connection with elevation and habitat management directed hydrologic regimes. With specific strategies, the vegetation inside the managed tidal wetland can be converted to the very same vegetation that occurs on the outside or tidal side of the dike. There is absolutely no wetland vegetation restoration potential involved in converting one wetland type with its own vegetation characteristics to another wetland type. This is not a matter of restoring a prior wetland that had been so modified as to completely lose its wetland vegetation back to a fully vegetated wetland.

Section 6.5 Hydrologic Conditions, Page 9 – Bank site hydrology still is described as being 100% impaired, with tidal flows prohibited by existing dikes and water control structures (WCS). This assertion simply is not accurate; in fact, it is a mockery of the existing hydrological capability. The presence of dikes and WCSs does not prevent tidal flow. As acknowledged in the FBI, hydrology and flows are dictated by the management prescribed for individual wetland units or cells. Baseline hydrologic conditions can vary significantly with changes in water management strategy. With the appropriate management, these areas could be subject to tidal exchange without breaching dikes or removing WCSs.

Section 6.8 Threatened & Endangered Species, Pages 10 & 11 – The FBI continues to make false statements regarding the utilization of managed impoundments by threatened and endangered species and ignores the well documented, significant habitat functions associated with managed wetland systems. The bank site, with proper management, can provide optimal habitat for the wood stork and other wading bird species.

Section 11.3 Baseline Study Findings & Functional Assessment, Pages 15 & 16 – DNR continues to object to the use of a baseline condition that is a moving target manipulated by the applicant. The proposed mitigation site has been modified over hundreds of years and converted to a different type of wetland that has its own set of functions and values. DNR does not consider the proposed mitigation site to be fully impaired. We consider it to be highly modified to enhance wildlife functions. The assessment method utilized (HGM) does not take into account the existing wetland functions associated with the mitigation site and limits evaluation to how the site differs from the reference condition, in this case intertidal salt marsh. We disagree with the statement that all functional assessment methodologies will document the highest level of impairment on this site. This would be true only if the baseline condition of the site was fully impaired and existing conditions provided no aquatic functions. That is certainly not the case in this situation.

In addition to HGM, the sponsor utilized the Restoration and Enhancement Table in the Corps of Engineers (COE) Mitigation SOP to justify a high net improvement in site functions following mitigation actions. Unfortunately, the COE Mitigation SOP does not take into consideration the existing functional state of a mitigation area and therefore does not provide an accurate assessment of functional lift. A net improvement factor of 3.5 assumes a fully impaired site with little to no functional value. Again, we disagree with this assumption.

Section 12.2 Restoration Mitigation Credit Assignment, Pages 22-24 – For restoration areas, the FBI proposes a Net Improvement Factor (NIF) of 3.5. Assigning this value would imply that these areas are significantly impaired and provide no wetland functions in their current state. The proposed mitigation site is not highly impacted; it is modified to enhance certain wetland functions and values and maximize wildlife (and certain fisheries) habitat productivity. The methods used in assessing functional lift result in an artificially inflated NIF. Such methods do not take into account the existing wetland functions associated with the mitigation site and limits evaluation to how the site differs from the reference condition, in this case intertidal salt marsh. With proper management, the potential exists for this site to provide similar or even greater core wetland functions than the adjacent natural marsh. The restoration and enhancement potential on this site is negligible.

Mitigation areas proposed for this bank include 38.1 acres of tidal creek and shallow water enhancement. These areas represent the larger man-made canals and a 32-acre borrow pit found on the site. These areas are to be naturally restored to shallow water habitats and are assigned a NIF of 3.0. No information on the current depths of these areas is provided and the potential for these areas to naturally transition to shallow water habitats is questionable, particularly the borrow pit. This deep water pit in its current state has very limited natural resource function and will continue to provide limited functions after the proposed mitigation work is performed. Existing canals on-site do not function as natural tidal creeks and may require modification to restore natural flow patterns. Until and unless mitigation actions are taken to restore historical ground elevations and natural tidal creek features, we do not consider there to be enhancement potential in these areas and recommend they be deleted from mitigation calculations.

Section 12.3 Preservation Mitigation Credit Assignment, Pages 24 & 25 – The bank sponsor proposes to either place a conservation easement on the property or transfer the property fee-simple to an approved land trust and to assign preservation mitigation credit to 194 acres of unimpounded marsh. As acknowledged in the FBI, the threat to this area is low. For this reason, DNR does not consider the preservation of tidal wetlands suitable as preservation mitigation and continues to recommend that no mitigation credit be assigned to these areas.

Section 14.8.4 Water Quality Performance Criteria, Page 28 – Water quality performance criteria is based on a comparison of water quality parameters with the reference area. The FBI includes water quality improvement as a component of site restoration. This being the case, performance criteria should target an improvement in water quality of restored areas over the baseline and not merely a comparison with the reference area. Documentation of success will be problematic given the fact that the baseline hydrology and water quality conditions are dictated by management and in this case are a moving target manipulated by the applicant.

In summary, DNR submits the following as its agency positions on the proposed bank:

1. The proposed FBI is based on flawed assumptions. The applicant has completely and utterly failed to address previously submitted legitimate science-based questions, and thus has not addressed the agencies' concerns. We do not believe the proposed bank has potential to restore or enhance wetland functions and generate wetland mitigation credits. We do not view this issue to be fixable.
2. Conversion of wetlands does not equate to restoration of wetlands.
3. Permitting and establishment of this bank would be an arbitrary and capricious action that will set an unnecessary precedent with multiple unanticipated consequences based on the premise that mitigation banks can be approved on the flimsy premise that wetland conversion equals wetland restoration.
4. DNR does not believe a Nationwide 27 is the appropriate permit to use or issue since the proposed project will not result in *aquatic habitat restoration*. We do not agree that any pre-certification pertaining to § 401 Water Quality nor any other state issued certificates should apply since the project will not result in wetland restoration. Should the proposed bank be allowed to move forward we urge that it do so only under an Individual Permit that will require its own, individual and respective Water Quality and Coastal Zone Consistency certificates.
5. There is no specific need to create a mitigation bank of this nature as the regulatory framework at both the state and federal levels does not allow for approval of permits for impacts to salt-marsh. Any specific need for credits from the proposed bank would require overwhelming public benefit, and these types of projects are not foreseen.
6. DNR will reserve the right to challenge permits and any necessary certificates through any and all available legal means.
7. DNR will not sign off as an IRT member on the proposed mitigation bank.
8. DNR will not agree to any future mitigation-need project proposals that seek use of credits through the proposed bank because we fundamentally believe that such mitigation offsets will not have been legitimately acquired as a result of a proper restoration-based mitigation strategy.
9. DNR continues to strongly discourage approval of this mitigation bank.

Mr. Nathaniel I. Ball
Proposed Clydesdale Mitigation Bank Final Banking Instrument
December 9, 2011

Thank you in advance for your favorable consideration of these comments in any future review of this proposed bank. If your office will require any further comment or analysis of the FBI or any aspect of this proposed bank, please contact our IRT representative Susan Davis at 843-953-9003 or at daviss@dnr.sc.gov.

Sincerely,

Bob Perry
Director, Office of Environmental Programs

c: IRT Members
John Frampton
Don Winslow
Robert Boyles
Emily Cope
Susan Davis

Exhibit G

South Carolina Department of
Natural Resources

1000 Assembly Street Suite 336
PO Box 167
Columbia, SC 29202
803.734.3766 Office
803.734.9809 Fax
perryb@dnr.sc.gov

Alvin A. Taylor
Director
Robert D. Perry
Director, Office of
Environmental Programs

August 7, 2012

Mr. Nat Ball
U.S. Army Corps of Engineers
Charleston District
69-A Hagood Avenue
Charleston, SC 29403-5107

REFERENCE: Proposed Clydesdale Club Mitigation Bank, P/N SAC 2009-00756, South Coast Environmental Group

Dear Mr. Ball,

On July 23, 2012 the Charleston District United States Army Corps of Engineers (USACE) posted for agency review the Pre-Construction Notification (PCN) for the above reference project in accordance with the Regional Conditions for the 2012 Nationwide Permits. The South Carolina Department of Natural Resources (DNR) hereby responds to that notification.

As you know DNR repeatedly has opposed the approval and establishment of the proposed Clydesdale Club Mitigation Bank. Our previous letters have consistently focused on the difficulty the project sponsor has had and will continue to have in demonstrating the ecological suitability of the site to achieve the objectives of the proposed mitigation bank. We have offered our considerable experience in successfully working with managed tidal impoundments in order to support the quality of the existing site to provide high wetland function and value. This site is not in need of restoration. We respectfully urge the USACE to not summarily dismiss the fact that no other state or federal agency in the nation has the cumulative scientific experience working with and performing and publishing research and management techniques in these types of habitats as does DNR. Further, it is a widely accepted fact that no other agency, organization or firm better understands how these systems work and the aquatic and other resource functions and values they provide. We offer these reasons to support these facts:

A. As relics of the rice era, managed tidal impoundments primarily exist and are maintained in a quantity of acreage only in South Carolina with very small acreages occurring in both neighboring states,
B. DNR has managed over 25,000 acres of this kind of habitat for many decades and
C. For many decades DNR has maintained a close relationship with the private and federal sector in managing this kind of habitat.[1]

Before it issues the applicant the requested permit, DNR respectfully requests the USACE contrast the legion of experience and understanding of DNR employees working within and among these types of habitats with that of the project sponsor to work within the same kinds of systems. DNR believes it has

[1] Gordon, D. H., B. T. Gray, R. D. Perry, M. P. Prevost, T. H. Strange and R. K.Williams. 1989. South Atlantic coastal wetlands. Pages 57-92 *in:* Habitat Management for Migrating and Wintering Waterfowl in North America, L. M. Smith, R. L. Pedersen and R.M. Kaminski, eds. Texas Tech University Press, Lubbock, TX. 574 pp.

the specific experience necessary to be working in tidal managed impoundments and imputing their natural resource value, productivity, functions and values or lack thereof.

The current notice requests an evaluation of the revised application to determine if it meets the terms and conditions of Nationwide Permit (NWP) 27 (Aquatic Habitat Restoration, Establishment and Enhancement Activities). Block 32 of the PCN application describes the project: *"The proposed mitigation project includes the restoration* (emphasis added) *of tidal wetlands in the Savannah River Watershed."*

> DNR reiterates that when this tract was impounded it was a freshwater intertidal wetland and it has remained a freshwater impounded wetland for at least 200 years, and it is naturalized as such. At its core, the proposed project would convert the site to a saltwater tidal wetland. Conversion of one wetland type to another does not constitute restoration of wetlands in the spirit intended and defined by regulation. The proposed bank would restore, enhance or establish nothing; it merely would change the functions and services that already are provided by the existing wetlands at the site. NWP 27 should be used for activities that restore, enhance or establish wetlands provided those activities result in net increases in aquatic resource functions and services. The applicant has not satisfied the Interagency Review Team that the proposed activities will result in a net increase in functions and values, but has demonstrated that the existing wetland functions and values will be converted to other wetland functions and values. DNR asserts the converted wetland functions and values will be no more valuable than the existing wetland functions and values. In fact, we argue functions and values will be less valuable for certain important aquatic, migratory and endangered species.[2]
>
> Also, NWP 27 does not authorize the conversion of wetlands to another aquatic habitat type unless hydrology is more fully restored through proposed activities. By doing nothing more than manipulating the existing water control structures the hydrology at the site can be just as easily more fully restored as it can by following the proposed mitigation bank activities, and without the habitat destruction that will occur if the project moves forward.

Blocks 34 and 35 of the application indicate a total of 5,165 yd^3 of fill will be discharged into waters of the United States or Critical Areas of the state of South Carolina.

> This amount of fill equals the amount of fill that would be required to repair 1,450 linear feet of a tidal, non-impounded wetland (assuming 20 ft crown width and 4 ft above marsh level). DNR does not believe either USACE or South Carolina Department of Health and Environmental Control (DHEC) would issue permits or certifications to impound an unimpounded wetland should this or even a lesser amount of fill be requested by an applicant who sought to restore a historically broken ricefield, especially so in the critical area. Many historic ricefields along the tidally influenced coastal region of South Carolina could be re-impounded with a similar or less amount of fill. DNR believes the mitigation bank proposal should only be permitted through an individual permit application; a PCN for NWP 27 is inappropriate for the proposed activity because of the amount of fill proposed and many other reasons.

Block 36 of the application lists the purpose of the proposed fill to be "*Marsh Restoration.*"

> As noted above, the site will not be restored by the proposed activities, but it will be converted, and to the detriment of important species. Further, the proposed wetland mitigation plan arbitrarily and overly devalues the 487.6 acres of wetlands to be converted in the name of restoration.

---

[2] Smith, R. D., A. Ammann, C. Bartoldus and M. M. Brinson. 1995. An approach for assessing wetland functions using hydrogeomorphic classification, reference wetlands, and functional indices. U. S. Army Corps of Engineers Waterways Experiment Station. Tech. rept. WRP-DE-9. 88 pp.

Mr. Nat Ball
Proposed Clydesdale Club Mitigation Bank
August 7, 2012

The following pertains to DNR's evaluation of the applicant's compliance answers to the General Conditions of NWP 27.

2. The applicant indicates: *"The proposed mitigation actions will improve aquatic life movement through the restoration of tidal marsh."*

   The proposed actions will not improve aquatic life movement over the status quo. Merely opening the existing water control structures and moving in the direction of a more holistic wetland management strategy would improve aquatic life movement. DNR previously has indicated that the applicant has deliberately shut down movement of aquatic life by closing water control structures to tidal action in order to set the lowest possible baseline, and then propose the maximum amount of functional lift by breaching dikes and removing water control structures.

   The applicant's agent holds a permit through DNR for harvest of American alligators (*Alligator mississippiensis*), through DNR's private land alligator hunting program. We presume the applicant is aware that this aquatic species will no longer utilize the site to the numbers historically documented should the proposed project move forward. Alligators are attracted to freshwater managed impoundments not tidal marsh, in part, due to lack of forage prey in open tidal marsh. This represents an excellent example of the unintended consequences and adverse impacts to important aquatic resources that will occur if the project is allowed to move forward.

3. The applicant indicates: *"The project will restore tidal marsh, which historically was used as spawning areas for a variety of marine species."*

   The proposed actions will not restore tidal marsh, but will result in a conversion. The area never functioned as a spawning area for marine species because it was impounded for the purposes of rice culture at least 200 years ago when the site was a mature freshwater forested wetland.

4. The applicant indicates: *"The project will be no adverse impact* (sic) *to migratory bird breeding areas."*

   DNR believes the proposed project will, in fact, result in significant adverse impact to important migratory bird breeding areas. At a minimum, pied-billed grebe (*Podilymbus podiceps*), least bittern (*Ixobrychus exilis*), green heron (*Butorides virescens*), common moorhen (*Gallinula chloropus*), red-winged blackbird (*Agelaius phoeniceus*) and boat-tailed grackle (*Quiscalus major*) nest in these types of intertidal freshwater marshes.[3] [4] DNR believes the site is breeding habitat for the black rail (*Laterallus jamaicensis*) and Macgillivray's seaside sparrow (*Ammodrammus mariamus macgillivraii)* both species currently proposed for review as candidates for protection under the Endangered Species Act (ESA).[5] Many other migratory avian species depend on habitats like these during winter and spring migration; these habitats are essential for maintenance of body condition that is critical to breeding in more northern climes.[6] No permits or certifications should be issued for the proposed project until a rigorous evaluation is completed to rule out adverse impact to these and other migratory birds.

[3] Post, W. and C. A. Seals. 1990. Bird density in an impounded cattail marsh. J. Field Ornithol. 62(2):195-199.
[4] Fredrickson, L. H. and T. S. Taylor. 1982. Management of seasonally flooded impoundments for wildlife. U. S. Fish and Wildl. Serv. Resour. Pub. No. 148. 29 pp.
[5] http://www.fws.gov/southeast/news/2011/11-063.html. Last accessed August 3, 2012.
[6] Martin, T. E. 1987. Food as a limit on breeding birds: a life history perspective. Ann. Rev. Ecol. Syst. 18:453-487.

18. The applicant indicates: *"The proposed mitigation project has been reviewed by all appropriate agencies with regard to Threatened and Endangered Species. No adverse impacts to threatened and endangered species will occur as a result of the restoration of tidal marsh."*

DNR believes the statements simply are not true. While the agencies have reviewed the proposed project, DNR is not aware that USACE has made or can make a determination that no threatened or endangered species will be adversely impacted if the proposed project moves forward. Further, DNR is not aware that there has been any formal consultation with the U. S. Fish and Wildlife Service (FWS) to determine if there could be any impacts to threatened and endangered species. The applicant's agent is not empowered by law and regulation to categorically state that no adverse impacts to threatened and endangered species will occur as a result of the proposed project. Also, as noted above, at least 2 bird species potentially adversely impacted under the proposed project have been identified as candidates for review to determine if they are eligible for listing under the ESA.

DNR is aware that a significant wood stork (*Mycteria americana*) rookery, the Levy rookery, is in very close proximity (approximately 1.4 mi) to the proposed project at Lat. 32.1599 Long. 81.0570. During 2012, the Levy rookery supported 109 wood stork nests. Based on an aerial survey conducted on June 18, 2012, it appeared that wood stork productivity was high there this year. There were many large chicks in the nests, and many nests contained 2 to 3 chicks.[7] Foraging resources are believed to be the limiting factor for wood storks and managed impoundments are identified, important foraging sites.[8] It is likely that wood storks use and have used the proposed mitigation bank site as a foraging site. Wood stork foraging is well documented at the adjacent Savannah National Wildlife Refuge.[9]

In central Florida, FWS has identified core foraging area (CFA) around all known wood stork nesting colonies that is important for reproductive success. CFAs include suitable foraging habitat (SFH) within a 15-mile radius of the nest colony; CFAs in North Florida include SFH within a 13-mile radius of a colony.[10] DNR maintains that preserving foraging habitat in the area is critical for wood storks.

DNR thus believes the applicant has arbitrarily and capriciously failed:

a. To use the best available scientific data concerning the impacts to an endangered species,
b. To make a rational connection between its conclusion that the available habitat will not be jeopardized, and known observations and facts submitted for the record,
c. To discuss relevant baseline conditions,
d. To accurately value fish and wildlife and endangered species habitat,
e. To account fully for the loss of short hydroperiod wetlands critical to migratory wildlife and the wood stork,
f. To provide a meaningful cumulative impacts analysis,
g. To recognize essential wood stork recovery objectives, and
h. To anticipate a potential level of take.

---

[7] Personal communication, data recorded by Ms. Christine Hand of the South Carolina Department of Natural Resources, June 2012.
[8] The Corps of Engineers Jacksonville District, U. S. Fish and Wildlife Service Jacksonville Ecological Services Field Office and State of Florida. 2008. Effect determination key for the wood stork in central and northern peninsular Florida. http://www.fws.gov/northflorida/WoodStorks/Documents/20080900_JAXESO_WOST_Key.pdf. Last accessed August 6, 2012.
[9] Personal communication, Ms. Jane Griess, August 3, 2012.
[10] The Corps of Engineers Jacksonville District, U. S. Fish and Wildlife Service Jacksonville Ecological Services Field Office and State of Florida. 2008.

Section 7(a)(2) of the ESA requires a federal agency to determine if its activities may affect a listed species [50 C.F.R. § 402.14(a)]. If so, the action agency must engage in formal consultation with FWS so that FWS can determine, based on the best available scientific evidence, that the action is not likely to adversely affect the species. DNR believes the spirit and intent of the ESA clearly calls for a formal ESA consultation with FWS, and that no permits should be issued for the proposed bank until such time as the consultation is completed with a finding of no impact to listed species.

19. The applicant indicates: *"The proposed mitigation project has been reviewed by all appropriate agencies with regard to migratory birds, bald eagles, and golden eagles."*

The applicant again misrepresented the facts. While all appropriate agencies have reviewed the proposal, it has been very clear that several agencies, including DNR, have expressed grave concern over the potential adverse impacts to migratory birds if the proposed project moves forward. There should be absolutely no misunderstanding that the site of the proposed project has served for decades as important habitat for migratory birds including waterfowl and their many allies. This site also serves as important breeding, foraging and wintering habitat for migratory wading and shore birds and passerines. As noted above, many other migratory avian species depend on habitats like these during winter and spring migration for maintenance of body condition that is critical to spring migration and breeding. Coastal managed impoundments in South Carolina are well documented to be critical foraging habitat for bald eagles.[11] The proposed project will most definitely have significant adverse impacts to migratory birds and bald eagles if it is permitted and moves forward.

22. The applicant indicates: *"OCRM has reviewed the proposed project and any required critical area permit will be obtained prior to initiation of the restoration activities."*

The applicant's statement is correct, however General Conditions for NWP 27 state that there can be no authorization for fill in critical waters until it has been determined that the proposed fill in critical resource waters will be no more than minimal. It is abundantly clear to DNR that 5,165 yd^3 of fill proposed to be placed in these critical resource waters is an amount that is significantly beyond minimal.

25. The applicant indicates: *"Not Applicable."*

DNR believes the proposed project, in fact, will result in adverse water quality impacts. Marsh soils in lower Savannah River estuary are known to contain hazardous contaminants[12] and the River may be the fourth most polluted in the nation.[13] DNR believes the following, but not necessarily only the following may be bound in sediments at the site of the proposed project: radioactive contaminants, metals, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, petroleum hydrocarbons, phenols, pesticides, dioxin congeners, cyanide and organotins. The proposed dredging and filling of 5,165 yd^3 of material at the site has the potential to release a significant amount of contaminants which could cause adverse impacts

[11] Murphy, T.M., F.M. Bagley, W. DuBuc, D. Mager, S.A. Nesbitt, W.B. Robertson and B. Sanders, eds. 1989. Southeastern States Bald Eagle Recovery Plan. U.S. Fish and Wildlife Service, SE Region, Atlanta, GA. 120 pp.
[12] Goldberg, E. D., J. J. Griffin, V. Hodge, K. Minoura and H. Windom. 1979. Pollution history of the Savannah River. J. Environ. Sci. Technol. 13(5):588-594.
[13] http://savannahnow.com/news/2009-10-22/savannah-river-fourth-most-polluted-nation. Last accessed August 3, 2012.

to water quality. Until such time as a satisfactory testing for contaminants is performed, DNR recommends that no permits or certifications for the proposed project be issued.

26. The applicant indicates: *"OCRM has reviewed the proposed mitigation action."*

    While staff of the DHEC Ocean and Coastal Resource Management has been involved in the review of the proposed mitigation bank at the Interagency Review Team level, a coastal zone consistency determination has not been made.

In summary, please accept this correspondence as another objection to the proposed Clydesdale Mitigation Bank. DNR objects to the use of NWP 27 as the permitting authority for the proposed bank. We believe there are many adverse impacts to natural resources associated with the proposal. Despite our best efforts, we do not believe our concerns and the concerns of other agencies have been adequately addressed. Upon thorough review of the submitted joint application for a PCN, DNR believes the applicant's submission of information is significantly flawed by use of arbitrary and capricious conclusions not supported by the best available science, and the applicant misrepresents the facts in a number of instances. We urge that no permits or certifications be issued for the proposed project. If there are any questions regarding the content of this correspondence please contact me at your earliest convenience.

Very truly yours,

Bob Perry
Director, Office of Environmental Programs

ec: Jay Herrington – FWS
Pace Wilber – NMFS
Blair Williams – DHEC-OCRM
Heather Preston – DHEC-EQC
IRT Members
John P. Evans – Chairman DNR Board
Alvin A. Taylor
Buford Mabry
Breck Carmichael

Exhibit H

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

May 30, 2012

Lt. Colonel Edward P. Chamberlayne
District Engineer
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, SC 29403-5107

Attn: Nat Ball

Re: Clydesdale Club Mitigation Bank Instrument
Jasper County, SC
FWS Log No. 2009-FA-0346

Dear Colonel Chamberlayne:

The U.S. Fish and Wildlife Service (Service) has received your May 17, 2012, letter requesting concurrence for approval of the final Mitigation Bank Instrument for the proposed Clydesdale Club Mitigation Bank. The Service does not support, and strongly discourages, the approval of this bank due to the reasons listed below.

- 485 acres of increasingly rare, functional, intact tidal freshwater impoundments and the associated fish and wildlife functions and values they are capable of providing will be impacted and irretrievably lost.
- Bank approval will set an ecologically unwise precedent given the finite and diminishing amount of freshwater impoundments in the Savannah River system and along the South Carolina coast.
- The bank will impact habitat utilized by migratory birds, a Federal Trust Resource.
- Establishment of the bank could negatively affect management capabilities within the Savannah National Wildlife Refuge.

Accordingly, the Service will not endorse the establishment of this proposed mitigation bank.

We appreciate the opportunity to review and provide comments on the submitted document. If you should need further assistance please contact Mr. Mark Leao at (843) 727-4707 ext. 228 and reference FWS Log No. 2009-FA-0346.

Sincerely,

for Jay B. Herrington
Field Supervisor

JBH/MCL

Exhibit I

South Carolina Department of
Natural Resources

1000 Assembly Street Suite 336
PO Box 167
Columbia, SC 29202
803.734.3766 Office
803.734.9809 Fax
perryb@dnr.sc.gov

Alvin A. Taylor
Director
Robert D. Perry
Director, Office of
Environmental Programs

July 17, 2012

LTC Edward P. Chamberlayne, PE, PhD
U.S. Army Corps of Engineers
Charleston District
69-A Hagood Avenue
Charleston, SC 29403-5107

ATTENTION: Nat Ball

REFERENCE: Proposed Clydesdale Club Mitigation Bank, P/N SAC 2009-00756, South Coast Environmental Group

Dear LTC Chamberlayne,

The South Carolina Department of Natural Resources (DNR) has repeatedly opposed the approval and establishment of the above referenced project, the proposed Clydesdale Club Mitigation Bank. Our agency has offered a number of comment letters through the Interagency Review Team (IRT) process; specifically we call your attention to letters dated October 21, 2009 (addressing the Draft Prospectus by expressing potential, but indicating more information needs), December 22, 2009 (opposing the Final Prospectus), May 20, 2010 (opposing the Baseline Monitoring and Functional Assessment Report), December 17, 2010 (opposing the Draft Mitigation Banking Instrument), December 9, 2011 (opposing the Final Mitigation Banking Instrument [Final MBI]) and on May 31, 2012 (opposing the proposed bank and refusing to sign, as requested, the concurrence statement).

DNR believes that the project sponsor has failed to demonstrate the ecological suitability of the site to achieve the objectives of the proposed mitigation bank, and we have very serious doubts that the site will support the planned types of aquatic resources, functions and values. We know well and have attempted to demonstrate that the planned objectives of the proposed bank will not produce higher wetland functions and values, just different ones. Respectfully, we argue these points from a well informed and practiced point of view; as your staff knows well, DNR manages many thousands of acres of these types of habitats, has many decades of experience in this arena, its employees have published many peer reviewed articles on the management and aquatic resource importance of managed tidal wetlands and these same employees are nationally recognized and sought-after by others in the academic, management and legal professions for their expertise and work.

Per transmission dated July 3, 2012 to IRT members from Nat Ball, it was indicated the applicant had submitted a revised permit application for the proposed mitigation bank. Following inquiry as to whether or not the Corps of Engineers would be publishing a public notice for the revised

permit application, Mr. Ball replied that the September 28, 2009 public notice will stand. DNR objects to this approach. The proposed Final MBI has been modified substantially during the 2-year, 10-month period since first public noticed as a Draft Prospectus. Further, we understand the Final MBI has been modified recently pursuant to objections submitted by the South Carolina Department of Health and Environmental Control (DHEC). An electronic copy of the 44-page primary document has been provided to the IRT, however relevant appendices needed to evaluate recent changes have not been provided. Accordingly, DNR requests a copy of the current, full and revised Final MBI so that those recent changes can be properly vetted by DNR and hopefully through the full IRT.

Pursuant to the lengthy period of time that has elapsed and the substantial, and particularly most recent, changes that have been made to the proposed banking documents, DNR also requests that the revised application be placed on public notice and opened for a final public comment period of a minimum of 15-days. We note that per regulation the project sponsor must provide supporting documentation that explains how the Final MBI addresses the comments provided (by the agencies) to the IRT; this has not been done.

In our letter of May 31, 2012, DNR expressed that our interpretation of the Mitgation Rule does not give DNR standing to enter into the Dispute Resolution Process. That interpretation was based on review of the Federal Register Vol. 73, No. 70, Thursday, April 10, 2008, or commonly known as the *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources*. Upon review of 33 C.F.R. § 332.8 and 40 C.F.R § 230.98 it is clear that, in addition to the Federal Agencies, the other members of the IRT do, in fact, have standing to implement a dispute resolution. Therefore, DNR respectfully restates it objections to the proposed mitigation bank moving forward and formally requests dispute resolution. We note that in addition to our letter of opposition filed on May 31, 2012, that on May 30, 2012 the United States Fish and Wildlife Service (FWS) objected to the bank and did not sign the concurrence statement; on June 7, 2012 the National Marine Fisheries Service (NMFS) noted the Final MBI did not address that agency's concerns and staffing limitations prohibited them from initiating a dispute resolution process; and in their June 5, 2012 letter DHEC also indicated it could not support the Final MBI.

In accordance with 33 C.F.R. § 332.8(e)(2) and 40 C.F.R. § 230.98 (e)(2) the district engineer must respond to objections within 30 days of receipt of objections. It is clear that FWS, NMFS, DNR and DHEC objected to the Final MBI. We know of no letter from the Corps of Engineers that responded to those objections within the 30-day time frame. We therefore believe our current objection and request for dispute resolution has both merit and standing.

As previously stated, Corps of Engineers staff appear to have negotiated with DHEC to assist the bank sponsor produce a revised Final MBI. We are distressed that no such negotiation occurred with the other agencies represented in the IRT. We believe this gives further merit and standing to our objection and request for dispute resolution.

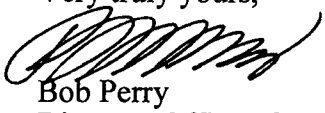
DNR offers its previously submitted letters, as referenced above, as a clear and unequivocal basis for our objection to the proposed Final MBI. Prior to the September 28, 2009 public notice the subject property would have been classified as an impounded *wetland.* In fact, when it was impounded it was a *freshwater intertidal wetland* and it has remained a *freshwater impounded wetland* for at least 200 years. At its core, the proposed bank documents clearly proposes to

convert the site to a *saltwater tidal wetland. Conversion* of one wetland type to another does not constitute *restoration* of wetlands in the spirit intended and defined by regulation. Under current regulatory climate, it would be impossible for any individual or agency to obtain a permit to convert a saltwater tidal wetland to a freshwater impoundment (*EPA vs Graham Reeves*) even if the amount of fill necessary were to be negligible.

Mr. Ball's transmission of July 3, 2012 also indicates the Corps of Engineers is evaluating the revised application to determine if it meets the terms and conditions of Nationwide Permit Number 27 (Aquatic Habitat Restoration, Establishment and Enhancement Activities) (NWP 27). For a number of reasons, the proposed mitigation bank and Final MBI should not be approved under a NWP 27. First, NWP 27 should be used for activities that *restore*, enhance or establish wetlands provided those activities result in net increases in aquatic resource functions and services. The proposed bank would restore, enhance or establish nothing; it merely would change the functions and services that already are provided by the existing wetlands at the site. The applicant has not satisfied the IRT that the proposed activities will result in a net increase in functions and values, but has demonstrated that the existing wetland functions and values will be *converted* to other wetland functions and values. DNR asserts the conversion wetland functions and values are no more valuable than the existing wetland functions and values. Second, NWP 27 does not authorize the *conversion* of wetlands to another aquatic habitat type unless hydrology is more fully restored during wetland rehabilitation activities. By doing nothing more than manipulating the existing water control structures the hydrology at the site can be just as easily fully restored as it can by following the proposed mitigation bank activities.

In summary, please accept this correspondence as another objection to the proposed Clydesdale Mitigation Bank, please note that we are invoking the prescribed dispute resolution process for the above stated reasons and we object to the use of NWP 27 as the permitting authority for the proposed bank. If there are questions regarding the content of this correspondence please contact me at your earliest convenience.

Very truly yours,



Bob Perry
Director, Office of Environmental Programs

ec: Jay Herrington – FWS
Pace Wilber – NMFS
Blair Williams – DHEC-OCRM
Heather Preston – DHEC-EQC
IRT Members
John P. Evans – Chairman DNR Board
Alvin A. Taylor
Buford Mabry
Breck Carmichael

Exhibit J

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
(727) 824-5317; FAX (727) 824-5300
http://sero.nmfs.noaa.gov/

June 7, 2012 F/SER47:JD/pw

(Sent via Electronic Mail)

Lt. Col. Edward P. Chamberlayne, Commander
Charleston District, Corps of Engineers
69A Hagood Avenue
Charleston, South Carolina 29403-5107

Attention: Nat Ball

Dear Lt. Colonel Chamberlayne:

NOAA's National Marine Fisheries Service (NMFS) reviewed your letter, dated March 28, 2012, announcing the Charleston District's intent to approve the Clydesdale Club Final Mitigation Banking Instrument (MBI) proposed by South Coast Environmental Group for a salt marsh mitigation bank on the Savannah River (public notice SAC-2009-00756).

NMFS expressed concerns about establishment of this bank in letters dated December 17, 2010, and December 8, 2011. As noted in these letters, NMFS does support the services areas proposed in the MBI. The primary service area for the Clydesdale Club Mitigation Bank should be limited to 03060109-Lower Savannah; the secondary service area should be limited to 03060110-Calibogue Sound/Wright River; and the tertiary service area should be limited to 03050207-Salkehatchie/Combahee, 03050208-Broad, and 03050210-St. Helena Island. The service area should not extend 100 miles and across several watersheds to include wetlands in the Edisto, Stono, Cooper, or Bulls Bay watersheds. NMFS also believes the net improvement factor used in the MBI is not warranted for a project that currently provides wildlife habitat. Finally, the restoration, enhancement, and preservation credits proposed in the MBI encompass a range of values and the number of credits the Charleston District is preparing to allocate to the bank is not clear.

While the final MBI does not address the concerns NMFS has raised, staffing limitations prohibit NMFS from initiating the formal dispute resolution process described in 33 CFR §332.8(e). The issues associated with this bank highlight the need for the Charleston District and the IRT to develop a method of credit calculations for tidal wetlands in coastal South Carolina; NMFS is looking forward to being actively involved in that process.

We appreciate the opportunity to provide these comments. Please direct related correspondence to the attention of Ms. Jaclyn Daly at our Charleston Area Office. She may be reached at (843) 762-8610 or by e-mail at Jaclyn.Daly@noaa.gov.

Sincerely,

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Nathaniel.I.Ball@usace.army.mil
DHEC, trumbumt@dhec.sc.gov, Weneriwr@dhec.sc.gov
SCDNR, DavisS@dnr.sc.gov; MixonG@dnr.sc.gov; VejdaniV@dnr.sc.gov; PerryB@dnr.sc.gov
SAFMC, Roger.Pugliese@safmc.net
EPA, Laycock.Kelly@epa.gov
FWS, Karen_Mcgee@fws.gov; Mark_Leao@fws.gov
F/SER4, David.Dale@noaa.gov
F/SER47, Jaclyn.Daly@noaa.gov